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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,452	09/30/2003	William G. Kerr	1372.79.PRC	2451
23557	7590	10/17/2006	EXAMINER	
SALIWANCHIK LLOYD & SALIWANCHIK A PROFESSIONAL ASSOCIATION PO BOX 142950 GAINESVILLE, FL 32614-2950			HAMA, JOANNE	
			ART UNIT	PAPER NUMBER
			1632	

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/605,452	<b>Applicant(s)</b> KERR ET AL.	
	<b>Examiner</b> Joanne Hama, Ph.D.	<b>Art Unit</b> 1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 29,32,35,39,40,43-47,50 and 51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29,32,35,39,40,43-47,50 and 51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>See</u>                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 14, 2006 has been entered.

Claims 1-28, 30-31, 33-34, 36-38, 41-42 are cancelled. Claims 29 and 43 are amended.

Claims 29, 32, 35, 39, 40, 43-47, 50, 51 are under consideration.

### **New/Maintained Rejections**

#### ***Priority***

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e) as follows: the later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with

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the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 60/319,583, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. Provisional application 60/319,583 does not provide adequate support or enablement for a method of inducing proliferation in human or mouse ES or hematopoietic cells, wherein proliferation is induced following administration of anti-s-SHIP or SIP-110 shRNA. The specification of the provisional application does not adequately disclose the steps one would take to arrive at the claimed invention. See the rejections under 35 U.S.C. 112, first paragraph, above for an in depth discussion regarding lack of enablement.

As such, the priority for the instant application is September 30, 2003.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

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be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 29, 32, 40, 43, 44, 47, 50, 51 are newly provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4-6 of copending Application No. 10/709,801 ('801) in view of Rohrschneider et al. 2000, Genes and Development, 14: 505-520.

The scope of '801 is broader than that of the instant invention and encompasses the envisioned embodiments of the instant invention. The '801 specification teaches that ES cells were treated with SHIP-specific shRNA vectors ('801 specification, Example 4) and the specification teaches that interference with SHIP function can be used to expand the number of hematopoietic cells ('801 specification, parag. 52 and 53).

It is noted that making shRNA against s-SHIP/SIP-110 (human homolog of mouse s-SHIP) would necessarily target full length SHIP/SIP. For example, Rohrschneider et al. teach that SIP-110 is similar in sequence to full length SIP, but does not have the N-terminal of full length SIP (Rohrschneider et al., Figure 2).

This is a provisional obviousness-type double patenting rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 29, 32, 35, 39, 40, 43-47, 50, 51 remain rejected in modified form under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention for reasons of record August 9, 2005 and April 12, 2006.

Upon further consideration, new issues of rejection have been considered and are discussed below. Following the rejections, the Examiner addresses the Applicant's rebuttals.

The claims are drawn to methods of inducing proliferation of human or mouse ES or hematopoietic cells by introducing an anti-SIP-110 or anti-SHIP shRNA to the cells.

At the time of filing, the art teaches that there is unpredictability in guiding a multipotent cell to a particular fate. Zandstra et al., 2000, Biotechnol. Bioeng., 69: 607-617, teach that a clear understanding of how stem cell genetic programs can be altered by changing the nature or frequency of interactions with their cytokine microenvironment has been technically difficult to address (Zandstra et al., page 608, 1<sup>st</sup> col., 1<sup>st</sup> parag.). In the case of the expansion of hematopoietic stem cells, the art teaches that expansion of hematopoietic cells was not routine in the art. Verfaillie, 2002, Nature Immunology, 3: 314-317 teaches that one of the holy grails of stem cell research is *ex vivo* expansion of hematopoietic stem cells (HSCs) (Verfaillie, page 315, 1<sup>st</sup> col., 1<sup>st</sup> parag. under "Ex vivo HSC expansion"). Verfaillie teaches that the lack of HSC expansion appears to be

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caused by the cell death of one or both HSC progeny cells. Ex vivo culture is associated with increased expression of the Fas ligand CD95 and down-regulation of the anti-apoptosis gene Bcl2 on CD34+ cells; withdrawal from this state activates the caspase pathway in CD34+ cells (Verfaillie, page 315, 2<sup>nd</sup> col., 5<sup>th</sup> parag.). Verfaillie also teaches that while microenvironmental signals exist that can activate HSC self-renewal; however, it is not known what signals are involved that support HSC expansion (Verfaillie, page 316, 1<sup>st</sup> col., 2<sup>nd</sup> parag.). While the specification teaches that it is envisioned that reducing the expression levels of s-SHIP in mice and SIP-110 in human cells via shRNA would be a way of promoting proliferation (specification, parag. 10), nothing in the art teach that s-SHIP or SIP110 have any role in proliferation in ES or hematopoietic cells. This is an issue as the art teaches that the signals involved in controlling cell fate are not known. As such, without guidance, an artisan cannot arrive at the claimed invention.

At the time of filing, the art teaches that there are differences between mouse cells and human cells that an artisan cannot readily predict that what studies have been carried out in mouse necessarily translate to events that occur in humans. For example, in the case of embryonic stem (ES) cells, Pera et al. 2000, Journal of Cell Science, 113: 5-10, teach that while mouse and human ES cells can originate from a pluripotent cell population, maintain normal karyotype, and are immortal and can be propagated indefinitely in the embryonic state, mouse ES cells can form clonally derived cultures capable of spontaneous differentiation into extraembryonic tissue and somatic cells of all three embryonic germ layers in teratomas or in vitro, whereas human cells

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cannot (Pera et al., page 6, under “a generic functional definition of an ES cell”). In the case of hematopoietic cells the art teaches there are human-mouse differences in proteins, such as, human serine proteases. While mice have at least seven mouse mast-cell chymase genes, these are absent in humans (Puentes et al., 2003, Nature Reviews: Genetics, 4: 544-558, page 546, 2<sup>nd</sup> col., 2<sup>nd</sup> parag.). As these issues apply to the instant invention, because there are differences between mouse and human cells, an artisan cannot reasonably predict that the methods used on human cells will be the same as those used on mouse cells. It is also noted that Puentes et al.’s teachings also indicates that an artisan cannot reasonably predict that human ES cells express SIP-110 or that human hematopoietic cells express SIP-110 and full length SIP like the mouse cells. As such, the specification does not provide guidance for an artisan to arrive at proliferating human ES and hematopoietic stem cells, using shRNA against SIP-110.

In addition to this issue, an artisan cannot reasonably predict that the function of s-SHIP in mice is the same as the human homolog, SIP-110. According to the art, not all homologs of proteins have the same function. For example, Rehli et al., 2000, Adv. Exp. Med. Biol., 477: 205-216 teach that carboxypeptidase M (CPM) function in mouse and human macrophages are not conserved (Rehli et al., abstract). As this issue applies to the instant invention, while the specification teaches that the first exons of SIP-110 and s-SHIP show a 82% nucleotide identity (specification, page 42), the specification does not provide guidance that the proteins are functionally conserved such that reduction in s-SHIP in mouse cells and SIP-110 in human cells will



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necessarily result in the same phenotype exhibited by the cells (in this case, proliferation). As such, the specification does not provide guidance for an artisan to use the claimed invention.

In addition to these issues, the specification (Figure 8) teaches that the mouse ES cells that were electroporated with shRNA against s-SHIP demonstrated a reduction in s-SHIP levels. This result suggests that the ES cells are hypomorphs for s-SHIP. At the time of filing, the art teaches that phenotypes in hypomorphs are not predictable. For example, Hermann et al., 2003, Nature Genetics, 33: 396-400, teach that when hematopoietic cells transduced with three different retroviral vectors containing shRNAs that target p53 (constructs p53-A, p53-B, and p53-C) were transplanted into irradiated mice, the cells exhibited different phenotypes (Hermann et al., page 398, 1<sup>st</sup> col., 2<sup>nd</sup> parag., see also abstract). As this issue applies to the instant invention, an artisan cannot reasonably predict what, if any, phenotypes would be exhibited by the hypomorphic human and mouse ES and hematopoietic cells made by the claimed invention. In addition to this issue, in the event that the cells exhibit an unexpected phenotype, it is unclear what use the claimed cells have. As such, an artisan is not enabled for the full scope of the claimed invention.

The electroporation of anti-s-SHIP shRNA also raises the issue as to whether one dose of anti-s-SHIP shRNA is enough to induce a mouse ES cell to proliferate. The art teaches that one limitation to using shRNA stems from the fact that its effects are transient and restricted by the rate of cell division (and by the fact that mammalian cells do not have the mechanisms to amplify and propagate RNAi (unlike *C. elegans* and

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plants)) (Hannon and Rossi, 2004, Nature 431: 371-378, page 373, 1<sup>st</sup> col., parag. under "RNAi as a solution for mammalian genetics"). As this applies to the instant invention, it is unclear what method steps would need to be taken such that an artisan knows what dosage of shRNA would need to be administered to the ES cells and hematopoietic cells such that proliferation would occur. As such, the artisan is not enabled for the full scope of the claimed invention.

The claims read on *in vivo* and *in vitro* methods of administering shRNA. At the time of filing, the art teaches that administration of shRNA *in vivo* was not routine in the art. Problems related to therapeutic use of nucleic acids were well known in the art at the time of invention (see for example Opalinska et al., 2002, Nature Reviews Drug Discovery, 1: 503-514). Such problems include the inability to specifically deliver an effective concentration of a nucleic acid to a target cell, such that a target gene is inhibited to a degree necessary to result in a therapeutic effect.

Opalinska et al. state on page 511

"[I]t is widely appreciated that the ability of nucleic-acid molecules to modify gene expression *in vivo* is quite variable, and therefore wanting in terms of reliability. Several issues have been implicated as a root cause of this problem, including molecule delivery to targeted cells and specific compartments within cells and identification of sequence that is accessible to hybridization in the genomic DNA or RNA"

and in column 2 of the same page,

"Another problem in this field is the limited ability to deliver nucleic acids into cells and have them reach their target. Without this ability, it is clear that even an appropriately targeted sequence is not likely to be efficient. As a general rule, oligonucleotides are taken up primarily through a combination of adsorptive and fluid-phase endocytosis. After internalization, confocal and electron microscopy studies have indicated that the bulk of the oligonucleotides enter the endosome-lysosome compartment, in which most of the material becomes either trapped or degraded."

Given this unpredictability, the skilled artisan would require specific guidance to practice the claimed methods *in vivo*, with a resultant inhibition of gene expression, as claimed.

The specification provides examples (e.g. see specification, Figure 8), however, cell culture examples are generally not predictive of *in vivo* inhibition and the methods of delivery of the exemplified cell line would not be applicable to delivery of oligonucleotides to any organism. Due to differences in the physiological conditions of a cell *in vitro* versus *in vivo*, the uptake and biological activity observed *in vitro* would not predictably translate to *in vivo* results. Given these teachings, the skilled artisan would not know *a priori* whether introduction of oligonucleotides *in vivo* by the broadly disclosed methodologies of the instant invention, would result in the oligonucleotide reaching the proper cell in a sufficient concentration and remaining for a sufficient time to provide successful inhibition of expression of a target gene. In fact, the state of the art is such that successful delivery of oligonucleotide sequences *in vivo* or *in vitro*, such that the polynucleotide or oligonucleotide provides the requisite biological effect to the target cells/tissues/organs, must be determined empirically. The specification does not provide the guidance required to overcome the art-recognized unpredictability of using nucleic acids in therapeutic applications in any organism. The teachings of the prior art do not provide that guidance, such that the skilled artisan would be able to practice the claimed therapeutic methods. Thus, while the specification is enabling for the examples set forth in the specification, the specification is not enabling for the broad claims of inhibiting the expression of any target gene in any organism as the art of inhibiting gene expression by introducing antisense oligonucleotides into an organism is neither routine nor predictable. The amount of experimentation required is such that one of skill in the art could not practice the invention commensurate in scope with the claims without

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undue, trial and error experimentation and therefore, the claims are not enabled for its full breadth of *in vivo* applications.

In addition to these issues, claims 35 and 45 indicate that SIP-110 or s-SHIP comprises the sequences of SEQ ID NOs. 1-3. However, according to a sequence search (see provided copies), SEQ ID NOs 1-3 do not encode any SIP-110 or s-SHIP. Subsequently, it is unclear what SEQ ID NOs 1-3 are and it is unclear how to generate anti-s-SHIP or SIP-110 shRNA against an unknown sequence.

Thus, the claims are rejected.

### ***Response to Arguments***

Applicant's arguments and the Declaration by Dr. Kerr under 37 CFR 1.132 filed July 14, 2006 have been fully considered but they are not persuasive.

Applicant indicates that the Tu et al. publication, previously submitted, teaches the formation of complexes that enables SHIP to hydrolyze the 5'-phosphate on PIP3, thus preventing membrane recruitment and activation of pleckstrin homology (PH) domain containing kinases that serve as effectors of PI3K signaling. SIP-110 was also shown to have enzymatic activity by Jefferson et al. (Applicant's response, page 6, 2<sup>nd</sup> parag.; see also Dr. Kerr's declaration, point 2). In response, while Applicant provides biochemical studies indicating the relationship of s-SHIP/SIP-110 to other proteins, the specification and art do not provide guidance that loss of s-SHIP/SIP-110 results in mouse or human ES or hematopoietic cell proliferation without differentiation. Applicant indicates that the results described in the manuscript of Exhibit B (Despots et al., 2006, Blood, 107: 4338-4345, previously cited) show that SHIP-deficiency in the HSC of mice

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enhances HSC proliferation and survival (Applicant's response, page 7, 1<sup>st</sup> parag.). In response, this is not persuasive because the teachings of Despons et al. do not support Applicant's assertion that s-SHIP has a role in the proliferation of HSC. According to Despons et al., the SHIP<sup>-/-</sup> mice were generated by deletion of the promoter and first exon of SHIP via a Cre-LoxP strategy (Despons, et al., page 4339, 1<sup>st</sup> col., 1<sup>st</sup> parag. under "Mice"). However, according to the art, s-SHIP mRNA is transcribed from a promoter within the intron between exons 5 and 6 of the SHIP1 gene and subsequently, SHIP1 knockout mice that have been generated by deleting the first exon express s-SHIP (Rauh et al., 2004, Biochemical Society Transactions, 32: 785-788, page 786, 1<sup>st</sup> col., 2<sup>nd</sup> parag.). As such, Despons et al. do not support the assertion that s-SHIP has a role in hematopoietic stem cell proliferation (Applicant's response, page 7, 1<sup>st</sup> parag.). Subsequently, because it is not clear what relationship s-SHIP has with cell proliferation in hematopoietic cells, it is not clear what relationship s-SHIP has with cell proliferation in ES cells.

The results of the SHIP<sup>-/-</sup> mice also raise another issue. It is noted that the mice is a null for full length SHIP, but still express s-SHIP in hematopoietic cells. In the situation where an artisan would administer anti-s-SHIP shRNA to hematopoietic cells an artisan would effectively be reducing the mRNA levels of full length SHIP and s-SHIP. As indicated above with regard to the unpredictability in the art as it applies to determining what signals are involved in determining cell fate, an artisan cannot predict what phenotype a hematopoietic cell would have upon reduction in mRNA of full length

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SHIP and s-SHIP. As such, an artisan is not enabled for the full breadth of the claimed invention.

Applicant indicates that Kavanaugh et al. 1996, Current Biology, 6: 438-445, supplied by Applicant, teaches that SIP-110 (the human homolog of mouse s-SHIP) binds with Grb2 and hydrolyzes PIP3, likely preventing PIP3 accumulation to significant levels (Kavanaugh et al., page 443, first column). Applicant indicates, like SHIP, SIP-110 opposes PI3K and thus, PI3K-effector pathways, which control cell proliferation and/or survival. In response, this is not found persuasive because while it may be presumed that reducing the levels of SIP-110 may lead to an increase in proliferation, via reducing the opposing activity that s-SHIP/SIP-110 has on PI3K, the art teaches that there are other signaling pathways that are associated with s-SHIP, such that an artisan cannot reasonably predict that the net result of s-SHIP reduction is reduction of PI3K suppression. For example, Rohrschneider et al., 2000, Genes and Development, 14: 505-520, teach that in the C-terminus of SHIP, there are SH3 and NPXY motifs which can bind SH2 and SH3 containing proteins. One protein found to bind to the C-terminus is PIAS, a protein inhibitor of STAT1 (Rohrschneider et al., page 512, 2<sup>nd</sup> col., under "PIAS1 interaction with SHIP"). As such, an artisan cannot reasonably predict that reduction of s-SHIP mRNA levels would reasonably result in cell proliferation.

Applicant indicates that RNAi affects the abundance of RNA and in turn the abundance of protein. Applicant also indicates that RNAi can be used to create hypomorphs as well as complete silencing (Applicant's response, page 8, 2<sup>nd</sup> parag.). In response, as indicated above, an artisan is not enabled to use RNAi (shRNA) in the

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claimed invention to arrive at proliferating mouse and human ES and hematopoietic stem cells. While the steps of making shRNA/RNAi are understood at the time of filing, the art does not teach how to predict phenotypes in cells following shRNA/RNAi administration to a cell. In particular for hypomorphs, the art teaches that an artisan cannot reasonably predict that a hypomorph is a reduced form a phenotype; rather the art teaches that there are cases where a hypomorph can exhibit unpredictable phenotypes. As such, the specification does not provide guidance to arrive at proliferating ES or hematopoietic stem cells.

Applicant indicates that consideration is to be given to post-filing date evidence (e.g. Declarations and Exhibits) offered by the applicants to show that the claimed invention works provided that the evidence is consonant with the teachings of the specification as filed (Applicant's response, page 9, parag. under statement by Dr. Kerr). In response, while an Examiner can take into consideration Declarations and Exhibits, specific steps and embodiments used to arrive at the claimed invention which were not known at the time of filing cannot make a specification sufficient (the Examiner discussed this issue with respect to In re Glass, Final Action, April 12, 2006, page 5). As discussed above, the art teaches a variety of issues which require that an artisan would need to perfect, in order to arrive at the claimed invention. While Applicant asserts that an artisan of ordinary skill would reasonably expect that sufficient s-SHIP/SIP-110 knockdown could be achieved to induce proliferation, growth and/or survival of ESC and HSC, an assertion is not evidence (Applicant's response, page 9). Applicant indicates that the enablement requirement does not require that the applicants

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reinvent the wheel (Applicant's response, page 9). In response, Applicant is claiming a novel method of arriving at proliferating ES and hematopoietic cells. According to the teachings in the art, the steps involved in inducing proliferation in cells are not well known; subsequently, an artisan cannot reasonably predict that one would arrive at the claimed invention.

It is noted that the rejection of claims 41, 42, 48, 49 is withdrawn as the claims are cancelled.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 32, 35 are newly rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 32 depends on claim 31, which is cancelled. For purposes of compact prosecution, claim 32 has been interpreted to be read on claim 29. Claim 35 depends on claim 32 and thus has been included in the rejection.



***Conclusion***

No claims allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joanne Hama, Ph.D. whose telephone number is 571-272-2911. The examiner can normally be reached Monday through Thursday and alternate Fridays from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, Ph.D. can be reached on 571-272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

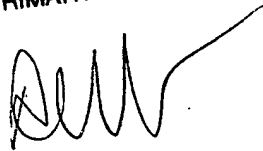
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center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

JH

ANNE M. WEHBE' PH.D  
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to be 'Anne M. Wehbe', with a long horizontal stroke extending to the right.

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Title: US-10-605-452C-3  
Perfect score: 25676  
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Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 2589679 seqs, 457216429 residues

Total number of hits satisfying chosen parameters: 2589679

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Minimum DB seq length: 0
Maximum DB seq length: 2000000000
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```
Post-processing: Minimum Match 0%
                  Maximum Match 100%
                  Listing first 45 summaries
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Database :      A_Geneseq_8:*
1:  geneseqp1980s:*
2:  geneseqp1990s:*
3:  geneseqp2000s:*
4:  geneseqp2001s:*
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6:  geneseqp2003as:*
7:  geneseqp2003bs:*
8:  geneseqp2004s:*
9:  geneseqp2005s:*
10: geneseqp2006s:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Result No.	Score	Query Match	Length	DB	ID	Description
1	11404	44.4	8973	8	ADP31119	Adp31119 Human sec

2	11198	43.6	5820	8	ADP31118	Adp31118	Human	sec
3	10998.5	42.8	6729	8	ADP31600	Adp31600	Human	sec
4	10885	42.4	4848	8	ADP31259	Adp31259	Human	sec
5	10801.5	42.1	5514	8	ADP31186	Adp31186	Human	sec
6	10801.5	42.1	5514	8	ADP31591	Adp31591	Human	sec
7	10754.5	41.9	10944	8	ADP31311	Adp31311	Human	sec
8	10754.5	41.9	11328	8	ADP31310	Adp31310	Human	sec
9	10683.5	41.6	4683	8	ADP31260	Adp31260	Human	sec
10	10639	41.4	7285	6	ABJ38280	Abj38280	pAMG21-RA	
11	10562	41.1	5397	8	ADP31068	Adp31068	Human	sec
12	10516.5	41.0	8976	8	ADP31425	Adp31425	Human	sec
13	10516.5	41.0	9195	8	ADP31494	Adp31494	Human	sec
14	10488	40.8	4360	8	ADP30525	Adp30525	Human	sec
15	10383.5	40.4	6465	8	ADP30705	Adp30705	Human	sec
16	10167	39.6	7339	6	AAO16358	Aao16358	Human	tra
17	9952.5	38.8	4752	8	ADP30585	Adp30585	Human	sec
18	9952.5	38.8	4752	8	ADP30651	Adp30651	Human	sec
19	9932	38.7	5304	8	ADP30706	Adp30706	Human	sec
20	9883	38.5	3907	5	ABG70822	Abg70822	Mouse	myo
21	9883	38.5	3907	6	ABG74190	Abg74190	Mouse	myo
22	9398	36.6	3585	8	ADP31117	Adp31117	Human	sec
23	9102.5	35.5	3638	8	ADP30981	Adp30981	Human	sec
24	9022	35.1	3316	8	ADP31116	Adp31116	Human	sec
25	8870	34.5	3398	9	AEB87634	Aeb87634	Human	ino
26	8816	34.3	4440	6	ABU88256	Abu88256	Novel	hum
27	8816	34.3	4440	6	ABU90135	Abu90135	Novel	hum
28	8816	34.3	4440	6	ABU96437	Abu96437	Novel	hum
29	8816	34.3	4440	6	ABU99046	Abu99046	Novel	hum
30	8816	34.3	4440	6	ABU98261	Abu98261	Novel	hum
31	8816	34.3	4440	6	ABU91967	Abu91967	Novel	hum
32	8816	34.3	4440	6	ABU85271	Abu85271	Novel	hum
33	8816	34.3	4440	6	ABO00410	Abo00410	Novel	hum
34	8816	34.3	4440	6	ABU88961	Abu88961	Novel	hum
35	8816	34.3	4440	6	ABO06457	Abo06457	Novel	hum
36	8816	34.3	4440	6	ABU95517	Abu95517	Novel	hum
37	8816	34.3	4440	6	ABU95207	Abu95207	Novel	hum
38	8816	34.3	4440	6	ABU90755	Abu90755	Novel	hum
39	8816	34.3	4440	6	ABU93917	Abu93917	Novel	hum
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42	8816	34.3	4440	6	ABU07907	Abu07907	Novel	hum
43	8816	34.3	4440	6	ABU94227	Abu94227	Novel	hum
44	8816	34.3	4440	6	ABO00100	Abo00100	Novel	hum
45	8816	34.3	4440	6	ABU87111	Abu87111	Novel	hum

#### ALIGNMENTS

##### RESULT 1

ADP31119

ID ADP31119 standard; protein; 8973 AA.

XX

AC ADP31119;

XX

DT 01-DEC-2005 (revised)

DT 12-AUG-2004 (first entry)

XX

DE Human secreted protein SEQ ID #3117.

XX

KW Cytostatic; Antiinflammatory; Immunosuppressive; Antibacterial; Virucide;  
cancer; inflammatory; immune; human secreted protein.

XX

OS Homo sapiens.

XX  
PN WO2004035732-A2.  
XX  
PD 29-APR-2004.  
XX  
PF 28-AUG-2003; 2003WO-US026780.  
XX  
PR 29-AUG-2002; 2002US-0406576P.  
PR 29-AUG-2002; 2002US-0406579P.  
PR 29-AUG-2002; 2002US-0406585P.  
PR 29-AUG-2002; 2002US-0406588P.  
PR 29-AUG-2002; 2002US-0406608P.  
PR 29-AUG-2002; 2002US-0406611P.  
PR 29-AUG-2002; 2002US-0406612P.  
PR 29-AUG-2002; 2002US-0406616P.  
PR 29-AUG-2002; 2002US-0406640P.  
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PR 17-SEP-2002; 2002US-0411046P.  
PR 17-SEP-2002; 2002US-0411048P.  
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PR 17-SEP-2002; 2002US-0411111P.  
PR 18-APR-2003; 2003US-0463700P.  
PR 18-APR-2003; 2003US-0463708P.  
PR 18-APR-2003; 2003US-0463716P.  
PR 18-APR-2003; 2003US-0463732P.  
PR 02-MAY-2003; 2003US-0467199P.  
PR 02-MAY-2003; 2003US-0467201P.  
PR 02-MAY-2003; 2003US-0467203P.  
PR 02-MAY-2003; 2003US-0467230P.  
PR 19-MAY-2003; 2003US-0471306P.  
PR 19-MAY-2003; 2003US-0471336P.  
PR 22-MAY-2003; 2003US-0472420P.  
PR 22-MAY-2003; 2003US-0472430P.  
PR 09-JUN-2003; 2003US-0476609P.  
PR 09-JUN-2003; 2003US-0476641P.  
PR 08-JUL-2003; 2003US-0485218P.

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PR      08-JUL-2003; 2003US-0485223P.
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.PR     08-JUL-2003; 2003US-0485325P.
PR      14-JUL-2003; 2003US-0486446P.
PR      14-JUL-2003; 2003US-0486480P.
PR      15-JUL-2003; 2003US-0486891P.
PR      15-JUL-2003; 2003US-0486960P.
PR      08-AUG-2003; 2003US-0493341P.
PR      08-AUG-2003; 2003US-0493370P.
PR      08-AUG-2003; 2003US-0493573P.
PR      08-AUG-2003; 2003US-0493577P.
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XX

PA (FIVE-) FIVE PRIME THERAPEUTICS INC.

XX

PI Williams LT, Chu K, Lee E, Hestir K, Beaurang PA, Behrens D;  
PI Halenbeck RF, Huang MM, Kothakota S, Haishan L, Linnemann T;  
PI Pierce K, Wang Y, Wong JGP, Wu G, Zhang H;

XX

DR WPI; 2004-348438/32.

XX

PT New nucleic acid molecule for diagnosing, preventing or treating diseases  
PT such as proliferative (e.g. cancer), inflammatory, immune, metabolic,  
PT genetic, bacterial and viral diseases.

XX

PS Claim 1; SEQ ID NO 3117; 428pp; English.

XX

CC The present invention relates to an isolated nucleic acid molecule  
CC encoding a polypeptide which is believed to be cytostatic,  
CC antiinflammatory, immunosuppressive, antibacterial and virucidal. The  
CC composition and methods are useful for diagnosing, preventing and  
CC treating diseases such as proliferative (e.g. cancer), inflammatory,  
CC immune, metabolic, genetic, bacterial and viral diseases. The present  
CC sequence represents a human secreted protein. The present sequence is  
CC available on WIPOWEB and is not in the specification. Note: This sequence  
CC is represented as a 3-letter coded protein in the corresponding sequence  
CC listing but appears to be a polynucleotide sequence.

CC

CC Revised record issued on 01-DEC-2005 : Sequence description line  
CC corrected

XX

SQ Sequence 8973 AA;

Query Match 44.4%; Score 11404; DB 8; Length 8973;  
Best Local Similarity 39.0%; Pred. No. 0;  
Matches 2703; Conservative 0; Mismatches 1351; Indels 2874; Gaps 409;

Qy	2	GCCCAC-TAATCCTTGAT-----GTTCACCT-----TGTC-	30
Db	34	GCCCGCTTCATCCACGATGGCCCTGAGGACACCTCTGACCAGCTGGTGTCTGGAGGTGTCA	93
Qy	31	-----CCCT-----GCC-----CCC	40
Db	94	GTGATGGCTTGGGTGCCTATGCCCTCATGCCTGCGGAGGGGCCAAACAGACCTCCTGCCC	153
Qy	41	AGAGAAGTCATCC-----GGACCCTCCCCATC-----	66
Db	154	ATCCAGGTCAACCCTGTCAATGACCCACCCACATCATCTTCCACATGGCAGCCTTATG	213
Qy	67	----CCTGG-----AGTCTCTG---CAGAGGTT-----ATTTGACCAG	97
Db	214	GTGATCCTGGAACACACACAAGCCTCTGGGGCCTGAGGTTCTCCAGGCCTATGACCTG	273
Qy	98	-----CAGCT-----CTCCC---CGGGCCT---CCGT-	118

Db	274	GACTCTACCTGTGAGGGCCTCACCTTCCAGCTCCTTGGCACCCCTCTGGCCTCCCCGTG	333
Qy	119	-----CCACGTCCT-----CAGGT-----TCCTGGT-----GAGGCC	145
Db	334	GAGCACCAGAGACCAGCCTGGGGAGCCGGTGACTGAGTTCTCCTGCTGGGAGTTGGAGGCC	393
Qy	146	--AATCCCA-----TCAAC-ATGGTGTCCAAGCTCAGCCAAC-TGACAAGCCTGTTGT	194
Db	394	GGCAGCCTAGTCTATGTCCACTGCGGTGGCCCTACACAG--GACTTGACATTCCGG--GT	449
Qy	195	CATCCAT----TGAAGACAAG-GTCAAGGCCTTGCTGCACGAGG-----GTCCTG-----	239
Db	450	CAGCAATGGACTGCAGGCCAGCCCCCGCCATGCTGAAGGTGGTGGCTGTCCAGCTGGC	509
Qy	240	-----AGTCTCCGCA-----CCGGCC-----CTC--CCTTATCCCTCCA	271
Db	510	CATACAAATCCACCGCAGCACAGGGCTGCATCTGGCCCAGGGCTCTGCCATGCCCATCTT	569
Qy	272	GTC-----ACCTTTGAGGTGAAGG-CAGAGTCTCTGGGGATTCTCTCAGAAAATGCAGCTC	325
Db	570	GCCTACCAACCTGT-TGGTGGAGACCAGCGCCG-TGGGGCAGGATGTGACCGTGCTGTTT	627
Qy	326	AAAGTCGACGTTGAGTCTG-----GGAACTGATCATTAAGAAGTCC-----AAGGA	372
Db	628	CATGTCACCGGAG-GCCTGCCGTTTCAGGGAGCTGCAGAAGCAGGGGGCTGGTGGGGTGA	686
Qy	373	TGGTTCTGA-----GGACA-----AGTTCTAC-----AGCCACAA	402
Db	687	GGATGCTGAGTGGTGGGTACACAGGCGTTCCACCAGCAGGATGTGGAGCAGGGCCACGT	746
Qy	403	GAAAATCCTGCAGCTCATTAAGTCACAGAAATT-TCTGA--ATAAGTTGGTGATCTTGGT	459
Db	747	GAGATACCTG-AGCAC--TGACCCACAGCACTACACCGAGGACACCGTGGAGAACCTGGA	803
Qy	460	GGAAACAGAGAAGGAGA-----AGATCCTGC <sub>2</sub> GGAAGGAATATGTTTTTGCT-GACTCCA	512
Db	804	TCTGCAGGTGCAGGTGAGCTGGGAAATCCTG----AGCAATCTGTCCTTCCTAGTGACCA	859
Qy	513	AAAAGAGAGAAGGCTTCTGCCAGCTCCTGCAGCAGATGAAGAACAAG--CACTCAGAG--	568
Db	860	TCCAGAGA----GCCACTG--TGTGGATGCTGCAGCTGGAGCCACTGCACACTCAGAACA	913
Qy	569	--CAGCCGAGCCCGACATGATCACCATCTTCATCGGCACC---TGGAACATGGGTAAC	622
Db	914	CCCAGCAGGAGGCCCTCACCACAGCCCACCTGGAGGCCACCCTGGAGGAGGCAGGCCCAA	973
Qy	623	GCCCC---CCTCCCAAGAAGATCACGTCCTGGTTTCTCTCCAAGG---GGCAG---GGA	673
Db	974	GCCCCCAACCTTCCACTGTGAGGTGGTTTCAGG-----CTCCAGGAAAGGCAACCTTCA	1028
Qy	674	AAGACGCGGGACGAC----TCTG-CGGACT--ACATCCCCCATGACATTTACGTGATCGG	726
Db	1029	ACTACAGGGCACGATGATGTCAGACGGTCAGGGCTTCAACCAGGA---TGACGT-ACAGG	1084
Qy	727	CACCCAAGAGGACC-----CCCT-GAGTGAGAAGGAGTGGC--TGGAGATCCTCAAAC	776
Db	1085	CTGCAGAGGTGACCTATGGGGCCATGGCACGTGCCTCAGTGGCAGTGGAGGACACCTTCT	1144
Qy	777	-ACTCCCTGCAAGAAATCACCAGTGTGACTTTTAAAACAG-----TCGCCATCCACA---	827
Db	1145	GTTTCCATGTCACAGCTCCACCATATTTCTCCCCACTCTGTACCTTCTCCATCCATATTG	1204
Qy	828	-CG----CTCTGGAACAT-CC--GCATCGTGGTGC-----TGGCCAAGC	863

Db 1205 GCGGTGACCCAG--ACATGCCTGTCCTCATGGTGCCCGAGGGTGGTGAGTGTGTCCTCTC 1262

Qy 864 --CTGAGCA-----CGAGAACCGGATCA--GCCA-----CATCTG--TACTGA 900  
 |||| || | ||| | ||| |||| | ||| ||| ||

Db 1263 TGCTGACCAGCTCTTCATCAAGAGTCTCAACAGTGCCAGGTGGCGGCTGCTGACTACAGA 1322

Qy 901 CAACGTGAAGACAGGCATTGCAAAACAC-----ACTGGGGAACAAGGGAGCCGTGGGGG 953  
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Db 1323 CAACATGGCCTTCAGCAATGCTGATTCGGGCTTTGCTGAGGCC-----AGC--TGGTGC 1375

Qy 954 TGTC-----GTTTCATGTTCAATGGAA-----CCTCCTTAGGGTTCGT-----CA 992  
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Db 1376 TGACCCACCAGGACCTCCTCTCTGGCAGTATCATGGCCACGGATGAGCCCATGCAGCCCA 1435

Qy 993 ACAGCCACTT-----GACTTCAGGAAG-----TGAAAAGA 1022  
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Db 1436 TCTGCCGCTTCATCCAGGAGGGGCTCAGGAAGAGGCGAGTCTGTGTCCGATGGGCAGC 1495

Qy 1023 AACT-----CAGGC--GAAACC--AAAACCTATATGAACATT- 1054  
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Db 1496 ACCAGGCCATCACGGTGCTGGAGGTGCAGGCCTTGAGCCTTACCTCTGTGTGGCCAATG 1555

Qy 1055 -CTCCGGTTCCTGGCCCTGG-GCGACAAGAAG--CTGAGTCCCTTTAACAT---CACTCA 1107  
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Db 1556 GCTCCGG--CCT---CATGGTTCCTCAAGGAGGCCAGGGTACCATCAACATGGCCGAGCT 1610

Qy 1108 CCGCTT---CACGCACCT---CTTCTGGTTTGGGGAT---CTTAACACCGTGT---GG 1154  
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Db 1611 CCACCTGGGCACCAACCTCAACATCTGCAGTAGGGATGAGGC-CCACTACCACGTACAG 1669

Qy 1155 ATCTGCCTAC-CTGGGAGGCAG-----AAACCA-TCATCCAGAAA-----ATCAAGCA 1200  
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Db 1670 A-CAGCCCTCACTGGG-GACAGTTGCTCCAAGCCACTCAGCCAGCCACAGCCTTCTCTCA 1727

Qy 1201 GCA-----GCAGTAC-----GCAGAC----CTCCTGTCC 1225  
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Db 1728 GCAGGACCTGCTGGTTGGGGCTGTTCCCTATGGCCACAATGGCAGCCTCAGCTCCTG--C 1785

Qy 1226 CACGACCAG--CTGCTCACAGAGAGGGAGGCAG-----AAGGTCTTCCTACA--- 1272  
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Db 1786 AACACCCTGGCCTTCTCAATG-GATGTGGGACCAGTGCACACAGATGCCACCCTACAAGT 1844

Qy 1273 -----CTTCGAGGAGGAAGAAATCACGTT-----TGCCCCAAC-----CTA 1308  
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Db 1845 GACCATTGCCCTAGAGGGCCAGTAGCCCCACTGAAGCTGGCCCAGCACAAGAAGATCTA 1904

Qy 1309 C--CGTTTTGAGAGA-----CTGA-CTC----GGGACAAAT-----ACGCC----- 1342  
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Db 1905 CATCTTCCAGGGAGAGGCAGCTGAGATCAGAAGGGACCAGCTGGAGGTAGCCCAGGAGGC 1964

Qy 1343 --TACACCAAGCAGAAAGCG-----ACAGGGATGAAGTACAAC--TTGC---CTTCCTGG 1390  
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Db 1965 AGTGCCGCCAGCAGACATCGTTTCTCAGTGAAG-AGCCCACCGAGTGCCGGCTACCTGG 2023

Qy 1391 T----GTGAC-CGAGTCCTCTGGAAGTCTTATCC-----CCTGGTGCACGTG--GTGTG 1437  
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Db 2024 TGATGGTGTCTGCGTGGCATCTTGGCAGATGAGCCACCCAGCCTGGACCCCGTGCAGAGCT 2083

Qy 1438 TCAGTCTTATGGCAG-----TACCAG-----CGACAT----- 1464  
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Db 2084 TCTCCCAAGAGGCAGTGGACACAGGCAGGATCCTCTACCTGCACTCCCGCCCTGAGGCCC 2143

Qy 1465 -----CATGAC-----GAGTGACCACAGCC-----CTGTCTTTG-----CCACAT 1499  
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Db	2144	GGAGCCATGCCTTCTCGCTGGATGTGGCCTCGGCCTGGGTGCTACCCTTGAGGACGTCAC	2203
Qy	1500	TTGAGGCAGGAG-----TCACTTC----CCAGTTTGT-CTC-----CAAGA-----	1535
Db	2204	GTGGAGCTGGAGGTGGAAGAGCATCTGATCCAGTACCTGCACGATGGGAGCAAGACACTG	2263
Qy	1536	ACG-----GTCCCC--GG-----ACTG--TTGACAGCCAAGGACAGATTGAG--TT	1575
Db	2264	ACGGTTTTTGTCTGATGGCTAATGCCTCTGAGATGGACCGCCAGAGCCATCCTGTGGCCT	2323
Qy	1576	TCTCAGGTGCTATGC--CACATTGAAGACCAAGTCCCAGACCAAATTCTA-----CCT	1626
Db	2324	TCACTGTCACCATCCTGCCTGTCAATGGCCAA-CCCCGACCTCATACAACTCAGGCCT	2382
Qy	1627	GGAGTTCCACTCGAGCTGCTTGGAGAGTTTT-----GTCAAGAGTCAGGAAGGAGAAAAT	1681
Db	2383	GCAGAGGCTCT-GAGGAGCATGGATGGTTACTCTGGGCCCAAGGACCTGGTGTACACCAT	2441
Qy	1682	GAAGAA-----GGAAGTGAGG-GGGAGCTGGTGG----TGA-AGTTTGGT	1720
Db	2442	TAAGCAGCCCAGCAATGGGTGGGTAGTGCGGTGGGCGGTGCCGGGCACTGAGAGTCCGTC	2501
Qy	1721	GAGACTCTT-----CCAAAGC--TGAAGCCCATTATCTCTGACCCTGAGTACCT-----	1767
Db	2502	CAGCCACTCAGCAGCCAGAGCCTCAGAGCCAGCAGGCACCGACCCCAAGCTCCTGTCTA	2561
Qy	1768	-----GCTAGACCAGCACATCCTC-ATCAGCAT-----CAAG	1798
Db	2562	CCATGTGGTGCGGGGCTCCAGCTAGGCCGGCTCTTCCACGCCAGCATGACAGCACAGG	2621
Qy	1799	-----TC-CTCTGACAGCGA-----CGAATCCTAT	1822
Db	2622	GGAGGACCTGGTGAACCTCACTCAGGCAGAGACCCCGAGTTCATCATCTCGGAGCCGCT	2681
Qy	1823	GGC-----GAGGGCTGCATTGCCCTTCGGTTAGAGGC-----	1854
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Qy	1855	CACAGAAACGC-----AGCTGCCCAT-CTACACGC-----CTCTCACC----	1891
Db	2741	CACAGCAGCAGCAGAGATGCTGCACATGCACCACGCGCTGAAGGAGGCGCTCAGCATCA	2800
Qy	1892	-----CACCATGGGGA-----GTTGACAGGCCACTTCCAGGGG--GAGATCAAGCTGC	1937
Db	2801	TCGGTGACATCAACAGGACCACTGTTACCATGCCCCGCGCTGGACGACACCTGGTTGC	2860
Qy	1938	AG-----ACCTCTCAGG-GCAAGACGAGGGAGAAGCT--CTATGA---CTTTGTG---	1981
Db	2861	AGGTGCAGAGCATCCCTGACGCAC-ACAGGCCAGAGGCTTCCCCTGATCCCTTTGGGCCC	2919
Qy	1982	-----AAGACGG-----AGCGTGATGA-----	1998
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Qy	1999	-----ATCCA-----GTG--GGCCAAAGACCCTGAAGAGCCTCAC-----CAGCCA	2037
Db	2980	CCCAGATCCATGCGGCACGTGCCGGCC--GGGCC--GGTGGGTCTCCCCAAACACAGACT	3036
Qy	2038	CGACCCCA-----TGAAGCAGTGG--GAAGTCACTAG-----CAGGGCC-----CCTC	2078
Db	3037	CACCCCCACTCTCTGGGGCTGGGGCCGCTACCTCTGGCTTCTTCTGGGACTTTGTTCCCTC	3096
Qy	2079	C-GTGCAGTGGCTCCAGCATCACTGAAATCATCAACCCCAACTACATG-GGAGTGGGGCC	2136

# SCORE Search Results Details for Application 10605452 and Search Result us-10-605-452c-2.rag.

[Score Home](#)    [Retrieve Application](#)    [SCORE System](#)    [SCORE](#)    [Comments /](#)  
[Page](#)    [List](#)    [Overview](#)    [FAQ](#)    [Suggestions](#)

This page gives you Search Results detail for the Application 10605452 and Search Result us-10-605-452c-2.rag.

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OM protein - protein search, using sw model

Run on: July 28, 2006, 17:25:50 ; Search time 330.813 Seconds  
(without alignments)  
5448.236 Million cell updates/sec

Title: US-10-605-452C-2  
Perfect score: 24009  
Sequence: 1 GTTCCCACTAGTTGTTGAAC.....AATAAAATTGTGCCTTTCTA 3942

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 2589679 seqs, 457216429 residues

Total number of hits satisfying chosen parameters: 2589679

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

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1: geneseqp1980s:\*  
2: geneseqp1990s:\*  
3: geneseqp2000s:\*  
4: geneseqp2001s:\*  
5: geneseqp2002s:\*  
6: geneseqp2003as:\*  
7: geneseqp2003bs:\*  
8: geneseqp2004s:\*  
9: geneseqp2005s:\*  
10: geneseqp2006s:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result	No.	Score	% Query Match	Length	DB	ID	Description
1	10582	44.1	8973	8	ADP31119	Adp31119 Human sec	

2	10287.5	42.8	6729	8	ADP31600	Adp31600	Human	sec
3	10283.5	42.8	5820	8	ADP31118	Adp31118	Human	sec
4	10177.5	42.4	4848	8	ADP31259	Adp31259	Human	sec
5	10100.5	42.1	10944	8	ADP31311	Adp31311	Human	sec
6	10100.5	42.1	11328	8	ADP31310	Adp31310	Human	sec
7	10077.5	42.0	5397	8	ADP31068	Adp31068	Human	sec
8	10045.5	41.8	7285	6	ABJ38280	Abj38280	pAMG21-RA	
9	10034	41.8	5514	8	ADP31186	Adp31186	Human	sec
10	10034	41.8	5514	8	ADP31591	Adp31591	Human	sec
11	10029.5	41.8	4683	8	ADP31260	Adp31260	Human	sec
12	9987.5	41.6	9195	8	ADP31494	Adp31494	Human	sec
13	9958	41.5	8976	8	ADP31425	Adp31425	Human	sec
14	9931	41.4	4360	8	ADP30525	Adp30525	Human	sec
15	9779	40.7	6465	8	ADP30705	Adp30705	Human	sec
16	9667.5	40.3	7339	6	AAO16358	Aao16358	Human	tra
17	9588.5	39.9	4752	8	ADP30585	Adp30585	Human	sec
18	9588.5	39.9	4752	8	ADP30651	Adp30651	Human	sec
19	9409.5	39.2	3907	5	ABG70822	Abg70822	Mouse	myo
20	9409.5	39.2	3907	6	ABG74190	Abg74190	Mouse	myo
21	9391.5	39.1	5304	8	ADP30706	Adp30706	Human	sec
22	9006.5	37.5	3585	8	ADP31117	Adp31117	Human	sec
23	8792	36.6	3638	8	ADP30981	Adp30981	Human	sec
24	8748.5	36.4	4440	6	ABU88256	Abu88256	Novel	hum
25	8748.5	36.4	4440	6	ABU90135	Abu90135	Novel	hum
26	8748.5	36.4	4440	6	ABU96437	Abu96437	Novel	hum
27	8748.5	36.4	4440	6	ABU99046	Abu99046	Novel	hum
28	8748.5	36.4	4440	6	ABU98261	Abu98261	Novel	hum
29	8748.5	36.4	4440	6	ABU91967	Abu91967	Novel	hum
30	8748.5	36.4	4440	6	ABU85271	Abu85271	Novel	hum
31	8748.5	36.4	4440	6	ABO00410	Abo00410	Novel	hum
32	8748.5	36.4	4440	6	ABU88961	Abu88961	Novel	hum
33	8748.5	36.4	4440	6	ABO06457	Abo06457	Novel	hum
34	8748.5	36.4	4440	6	ABU95517	Abu95517	Novel	hum
35	8748.5	36.4	4440	6	ABU95207	Abu95207	Novel	hum
36	8748.5	36.4	4440	6	ABU90755	Abu90755	Novel	hum
37	8748.5	36.4	4440	6	ABU93917	Abu93917	Novel	hum
38	8748.5	36.4	4440	6	ABU86191	Abu86191	Novel	hum
39	8748.5	36.4	4440	6	ABU82046	Abu82046	Novel	hum
40	8748.5	36.4	4440	6	ABU07907	Abu07907	Novel	hum
41	8748.5	36.4	4440	6	ABU94227	Abu94227	Novel	hum
42	8748.5	36.4	4440	6	ABO00100	Abo00100	Novel	hum
43	8748.5	36.4	4440	6	ABU87111	Abu87111	Novel	hum
44	8748.5	36.4	4440	6	ABU91352	Abu91352	Novel	hum
45	8748.5	36.4	4440	6	ABU90445	Abu90445	Novel	hum

#### ALIGNMENTS

##### RESULT 1

ADP31119

ID ADP31119 standard; protein; 8973 AA.

XX

AC ADP31119;

XX

DT 01-DEC-2005 (revised)

DT 12-AUG-2004 (first entry)

XX

DE Human secreted protein SEQ ID #3117.

XX

KW Cytostatic; Antiinflammatory; Immunosuppressive; Antibacterial; Virucide;  
 KW cancer; inflammatory; immune; human secreted protein.

XX

OS Homo sapiens.

XX  
PN WO2004035732-A2.  
XX  
PD 29-APR-2004.  
XX  
PF 28-AUG-2003; 2003WO-US026780.  
XX  
PR 29-AUG-2002; 2002US-0406576P.  
PR 29-AUG-2002; 2002US-0406579P.  
PR 29-AUG-2002; 2002US-0406585P.  
PR 29-AUG-2002; 2002US-0406588P.  
PR 29-AUG-2002; 2002US-0406608P.  
PR 29-AUG-2002; 2002US-0406611P.  
PR 29-AUG-2002; 2002US-0406612P.  
PR 29-AUG-2002; 2002US-0406616P.  
PR 29-AUG-2002; 2002US-0406640P.  
PR 29-AUG-2002; 2002US-0406642P.  
PR 29-AUG-2002; 2002US-0406646P.  
PR 29-AUG-2002; 2002US-0406653P.  
PR 29-AUG-2002; 2002US-0406655P.  
PR 29-AUG-2002; 2002US-0406666P.  
PR 17-SEP-2002; 2002US-0410946P.  
PR 17-SEP-2002; 2002US-0410947P.  
PR 17-SEP-2002; 2002US-0410948P.  
PR 17-SEP-2002; 2002US-0410949P.  
PR 17-SEP-2002; 2002US-0410953P.  
PR 17-SEP-2002; 2002US-0410957P.  
PR 17-SEP-2002; 2002US-0410958P.  
PR 17-SEP-2002; 2002US-0410959P.  
PR 17-SEP-2002; 2002US-0410960P.  
PR 17-SEP-2002; 2002US-0410961P.  
PR 17-SEP-2002; 2002US-0410962P.  
PR 17-SEP-2002; 2002US-0411019P.  
PR 17-SEP-2002; 2002US-0411022P.  
PR 17-SEP-2002; 2002US-0411023P.  
PR 17-SEP-2002; 2002US-0411024P.  
PR 17-SEP-2002; 2002US-0411032P.  
PR 17-SEP-2002; 2002US-0411035P.  
PR 17-SEP-2002; 2002US-0411037P.  
PR 17-SEP-2002; 2002US-0411041P.  
PR 17-SEP-2002; 2002US-0411045P.  
PR 17-SEP-2002; 2002US-0411046P.  
PR 17-SEP-2002; 2002US-0411048P.  
PR 17-SEP-2002; 2002US-0411052P.  
PR 17-SEP-2002; 2002US-0411055P.  
PR 17-SEP-2002; 2002US-0411073P.  
PR 17-SEP-2002; 2002US-0411082P.  
PR 17-SEP-2002; 2002US-0411101P.  
PR 17-SEP-2002; 2002US-0411111P.  
PR 18-APR-2003; 2003US-0463700P.  
PR 18-APR-2003; 2003US-0463708P.  
PR 18-APR-2003; 2003US-0463716P.  
PR 18-APR-2003; 2003US-0463732P.  
PR 02-MAY-2003; 2003US-0467199P.  
PR 02-MAY-2003; 2003US-0467201P.  
PR 02-MAY-2003; 2003US-0467203P.  
PR 02-MAY-2003; 2003US-0467230P.  
PR 19-MAY-2003; 2003US-0471306P.  
PR 19-MAY-2003; 2003US-0471336P.  
PR 22-MAY-2003; 2003US-0472420P.  
PR 22-MAY-2003; 2003US-0472430P.  
PR 09-JUN-2003; 2003US-0476609P.  
PR 09-JUN-2003; 2003US-0476641P.  
PR 08-JUL-2003; 2003US-0485218P.

PR 08-JUL-2003; 2003US-0485223P.  
PR 08-JUL-2003; 2003US-0485224P.  
PR 08-JUL-2003; 2003US-0485325P.  
PR 14-JUL-2003; 2003US-0486446P.  
PR 14-JUL-2003; 2003US-0486480P.  
PR 15-JUL-2003; 2003US-0486891P.  
PR 15-JUL-2003; 2003US-0486960P.  
PR 08-AUG-2003; 2003US-0493341P.  
PR 08-AUG-2003; 2003US-0493370P.  
PR 08-AUG-2003; 2003US-0493573P.  
PR 08-AUG-2003; 2003US-0493577P.

PA (FIVE-) FIVE PRIME THERAPEUTICS INC.

PI Williams LT, Chu K, Lee E, Hestir K, Beaurang PA, Behrens D;  
PI Halenbeck RF, Huang MM, Kothakota S, Haishan L, Linnemann T;  
PI Pierce K, Wang Y, Wong JGP, Wu G, Zhang H;

DR WPI; 2004-348438/32.

PT New nucleic acid molecule for diagnosing, preventing or treating diseases  
PT such as proliferative (e.g. cancer), inflammatory, immune, metabolic,  
PT genetic, bacterial and viral diseases.

PS Claim 1; SEQ ID NO 3117; 428pp; English.

CC The present invention relates to an isolated nucleic acid molecule  
CC encoding a polypeptide which is believed to be cytostatic,  
CC antiinflammatory, immunosuppressive, antibacterial and virucidal. The  
CC composition and methods are useful for diagnosing, preventing and  
CC treating diseases such as proliferative (e.g. cancer), inflammatory,  
CC immune, metabolic, genetic, bacterial and viral diseases. The present  
CC sequence represents a human secreted protein. The present sequence is  
CC available on WIPOWEB and is not in the specification. Note: This sequence  
CC is represented as a 3-letter coded protein in the corresponding sequence  
CC listing but appears to be a polynucleotide sequence.

CC Revised record issued on 01-DEC-2005 : Sequence description line  
CC corrected

SQ Sequence 8973 AA;

Query Match 44.1%; Score 10582; DB 8; Length 8973;  
Best Local Similarity 36.6%; Pred. No. 0;  
Matches 2604; Conservative 0; Mismatches 1272; Indels 3245; Gaps 400;

Qy 4 CCCACTAGTTGTTGAAC TTTACCTTGAACCTCTGCTC-----CCAGGGAAG 49  
 |||| | || ||| | ||| | ||||| ||| ||| |||  
 Db 1364 CCCAGCTGGTGCTGACC--CACC-AGGACCTCCTCTCTGGCAGTATCATGGCCACGGATG 1420

Qy 50 T---CAT-CAGGAC-TCTGC-----CATCCC--TGGAGTCTCT-GCAGAG----GTTGTT 92  
 ||| ||| | |||| | |||| | | ||| | ||| |  
 Db 1421 AGCCCATGCAGCCCATCTGCCGCTTCATCCAGGAGGGGCCTCAGGAAGAGGCGAGTCCTG 1480

Qy 93 TGACCAA---CAGCTC-----TCCC-----CAGGCCTT-----C 118  
 || || | ||| | || | ||||| |  
 Db 1481 TGTCCGATGGGCAGCACCAGGCCATCACGGTCTGGAGGTGCAGGCCTTGGAGCCTTACC 1540

Qy 119 GC-----CCA-----CGACCTCA-GGTGCC-CGGAGAGGCCA--GTCCCATCACCA 160  
| | | | | | | | | | | | | | | | | | | | | |  
Db 1541 TCTGTGTGGCCAATGGCTCCGGCCTCATGGTTCCTCAAGGAGGCCAGGGTACCATCAACA 1600

Qy 161 TGGTTG-----CCAAACTCA-----GCCAATTGAC 185

Db 1601 TGGCCGAGCTCCACCTGGGCACCAACCTCAACATCTGCAGTAGGGATGAGGCCCACTACC 1660  
 Qy 186 AAGTC-----TGCT-----GTCT 198  
 | ||| |||| | ||  
 Db 1661 ACGTCACAGACAGCCCTCACTGGGGACAGTTGCTCCAAGCCACTCAGCCAGCCACAGCCT 1720  
 Qy 199 TCCAT-----TGAAGATAAGGTCAAGTCCTTGCTG-CACGAGGG----CTCAGAA 243  
 || | || | | || | || | || | ||||  
 Db 1721 TCTCTCAGCAGGACCTGCTGGTTGGGGCTGTTCCCTATGGCCACAATGGCAGCCTCAGCT 1780  
 Qy 244 TCT---ACCAACAGGCGTTC-----CCTTATCCCTCCG--GTCACCTTTG 283  
 || || | ||| || || | | | |||| |  
 Db 1781 CCTGCAACACCCTGGCCTTCTCAATGGATGTGGGACCAGTGCACACAGATGCCACCCTAC 1840  
 Qy 284 AGGTGAAGTCAGAGTCCCT---GGGCATT-----CCTCAGAAAATG----- 321  
 | |||| | | |||| |||| || | || | ||  
 Db 1841 AAGTGAC--CATTG-CCCTAGAGGGCCCCAGTAGCCCCACTGAAGCTGGCCCAGCACAAGA 1897  
 Qy 322 -----CATC-----TCAAAGTGGAC--GTTG-----AGTCT 345  
 |||| || | |||| | || || ||  
 Db 1898 AGATCTACATCTTCCAGGGAGAGGCAGCTGAGATCAGAAGGGACCAGCTGGAGGTAGCCC 1957  
 Qy 346 GGGAAACTG-----ATCGTT-----AAGAAG-----TCCAAG----- 372  
 ||| | | ||||| |||| | || |  
 Db 1958 AGGAGGCAGTGCCGCCAGCAGACATCGTTTTCTCAGTGAAGAGCCCACCGAGTGCCGGCT 2017  
 Qy 373 -----GATGGTTCTG-----AGGAC-----A 388  
 ||||| || ||||  
 Db 2018 ACCTGGTGATGGTGCTGCGTGGCATCTTGGCAGATGAGCCACCCAGCCTGGACCCCGTGC 2077  
 Qy 389 AGTTCTACAGCCACAAAAAAT-----CCTGCA---GCTCATTA 424  
 || || | || | | |||| | || |  
 Db 2078 AGAGCTTCTCCAAGAGGCAGTGGACACAGGCAGGATCCTCTACCTGCACTCCCGCCCTG 2137  
 Qy 425 AGTCCCAAG-----AGTTTCTAAACAAG---TTGGTGATT---TTG---- 459  
 || |||| || | | | | | |||| | |||  
 Db 2138 AGGCCCCGAGCCATGCCTTCTCGTGGATGTGGCCTCGGCCTGGGTGCTACCTTGAGGA 2197  
 Qy 460 -----GTGGAGACGGAGAAGG-AGAAAAT-----CCTG-----AGGAAG---G 493  
 ||||| |||| | || | || |||| || || |  
 Db 2198 CGTCACGTGGAGCTGGAGGTGGAAGAGCATCTGATCCAGTACCTGCACGATGGGAGCAAG 2257  
 Qy 494 AATATGT---TTTTG--CTGA-----CTCTAAGA-----AAAGAG-----A 524  
 | || |||| |||| |||| || || ||||  
 Db 2258 ACACTGACGGTTTTGTCTGATGGCTAATGCCTCTGAGATGGACCGCCAGAGCCATCCTG 2317  
 Qy 525 AGGCTT---CTGTCAAC-TCCTG----- 543  
 ||| | |||| | ||||  
 Db 2318 TGGCCTTCACTGTCAACATCCTGCCTGTCAATGGCCAACCCCCGACCTCATACAACTCA 2377  
 Qy 544 ---CAGCAGA-----TGAAGAACAAG----- 561  
 | |||| | || | || |  
 Db 2378 GGCCTGCAGAGGCTCTGAGGAGCATGGATGGTTACTCTGGGCCCAAGGACCTGGTGTACA 2437  
 Qy 562 -CATT---CGGAGCAGC-----CAGAGCCTGACA-TGA---TC 591  
 |||| | | |||| | | || | || || ||  
 Db 2438 CCATTAAGCAGCCCAGCAATGGGTGGGTAGTGCGGTGGGCGGTGCCGGGCACTGAGAGTC 2497  
 Qy 592 --ACCATCTTCATTGGCA-----CTTGAACATG--GGTAATGCACCCC----- 631  
 ||| | | | || || || | | || | ||||  
 Db 2498 CGTCCAGCCAC-TCAGCAGCCAGAGCCTCAGAGCCAGCAGGCACCGACCCCCAGCTCCTG 2556  
 Qy 632 --CTCCCAAGAAGATCACGTCCT-----GG---TTTCTCTCCAAG-----GG 668  
 || ||| | | | || || || | || | |

Db 2557 CTCTACCATGTGGTGCAGGGCCTCCAGCTAGGCCGGCTCTTCCACGCCCAGCATGACAGC 2616  
 Qy 669 GCAGGGAAAGACACG--GGACGACTCTGCTGACTACATCCCC-----CATGACATCTAT 720  
 ||||| | || | | | | | | | |||| | | |||||  
 Db 2617 ACAGGGGAGGACCTGGTGAACCTCACT-CAGGCAGAGACCCCGGAGTTCAT--CATCTCG 2673  
 Qy 721 GTG--ATTGGC-----ACCCAGGAGGATCCCC-----TTGG-A 750  
 | | |||| | | | | | | | | |||| |  
 Db 2674 GAGCCGCTGGCCAATATGTACTCATGTGGGAACCAGAACACACTGATGGAGGAGTTGGCA 2733  
 Qy 751 GAGAAGG---AGTGGCTGGA-----GCTACTCAGGCACTCCCTGC--AAGAAGTCAC-C 798  
 ||| ||| | | | | | ||| | | |||| | | | ||| | | | |  
 Db 2734 GAGCAGGCACAGCAGCAGCAGAGATGCTGCACATGCACCACGCGCTGAAGGAGGCGCTC 2793  
 Qy 799 AGCA-----TGACATTTAAA-----ACAGTTGCCAT--CCACACCC-----TC 834  
 |||| | |||| | | | | ||| |||| | | | ||| |  
 Db 2794 AGCATCATCGGTGACATCAACAGGACCACTGTTACCATGCCCCGCCCCGTGGACGACACC 2853  
 Qy 835 TG-----GAACAT-----TCGCATA 849  
 || | | || | | | | || | |  
 Db 2854 TGGTTGCAGGTGCAGAGCATCCCTGACGCACACAGGCCAGAGGCTTCCCCTGATCCCTTT 2913  
 Qy 850 G-----TGCTGCT---TG-CCAAGCCAGAG---CATGAGAATCGGAT---- 884  
 | | ||||| | | | |||| | | | | | | | |  
 Db 2914 GGGCCCTACCCCCCTGGTGTCTTGTGCCCCAGCCGGGGTCCCCAGTGTGCCGAGTGGCT 2973  
 Qy 885 -----CAG--CCATATCTGCAC-TGACAAC-----GTG-----AAGACA 915  
 ||| |||| | |||| | | | | ||| || ||||  
 Db 2974 GCACGCCCCAGATCCATG-CGGCAGGTGCCGGCCGGGCCGGTGGGTCTCCCCAACACA 3032  
 Qy 916 GGCATCGCCAACACCCTGGGAAACAAGGG-AGCAG-----TGGGA--GTGT 958  
 | | || | | |||| | | | |||| | | |||| | ||||  
 Db 3033 GAC-TCACCCCCACTCTCTGGGGCTGGGGCCGCTACCTCTGGCTTCTTCTGGGACTTTGT 3091  
 Qy 959 CCTTCATGTTCAATGGAACCT----- 979  
 | || || | || || | |  
 Db 3092 TCCTCCTGGGCACTGGCTCCAGCGGAGTTGAAAAATGCCACCTGAAGACAAGAGGACTAA 3151  
 Qy 980 ---CCTTGGGGTTCGTCAACAGCCACTTGACTT-----CTGGA-A 1015  
 ||| || | | | | |||| | | |||| |  
 Db 3152 AGGCCTCTTGGCACATAACACCACCCTTGAATTTCCAGTTCACCACCACCAGCCCGGACA 3211  
 Qy 1016 GCGAAAAAAGCTCAGGAGAAATCAAACCTATATGAACATC-----CTGCGGTTCTCTG 1068  
 | || | | |||| | | |||| | |||| | |||| | ||||  
 Db 3212 GTGACCACATTCTCATCAAAGTGCAAATTTCTATTCTTATCCCCACTTCTGCCAACCTTA 3271  
 Qy 1069 GCCC-----TGGGAGACAAGA-AGCTAAGCC----- 1093  
 || | | |||| ||| | ||| | |  
 Db 3272 AACCTACTTTAAGTCGCTTATACGGCATAGGAGCCAAAATAGCAGGGACACATCTTATAG 3331  
 Qy 1094 -----CATT-----TAACATCACCCACC---GCTTCACCCAC-C 1123  
 |||| | || || |||| | || || || ||  
 Db 3332 AATCCTTTGAAATGCATTTCACTTCTCACCTCCTCCACCTCCTTCTACACTCTCTC 3391  
 Qy 1124 TC-----TTCT-----GG-----CTTG-----GG 1137  
 || | | |||| | | |||| | |  
 Db 3392 TCAACGAAACCGCTGTTCTTCCTTCAACCAAGGATAAAATCAAGCACTTGTTGCGGGCGC 3451  
 Qy 1138 GATCTCAACTACCGCGTGGAGCTGC---CCACTTGGGAGGC-AGAGGCCATCATCCAGAA 1193  
 | ||| || ||||| | | || | ||||| ||| || | ||||  
 Db 3452 GGACTCCAC-ACCGCG---GCCGCCGCCCCAGGGGAGGAGTGAGTCCGCC--CCAGCG 3504  
 Qy 1194 GATCAAGC-----AACAG---CAGTATTC-AGACCTTCTG--GCC---CACGAC---- 1233  
 | | | | | | | | || ||| | || || | ||| | || |

Db 3505 GCGCCAACCCGGGGACCCGGGGCAAGGGTTCGGGGCCATCCGCCGCCGGGCGCGCCCCC 3564  
 Qy 1234 -----CAACTGCTCC-----TGGAGAGGAAGGACCAGAAGGTCTT 1268  
                           | | | | |                   | | | | | | | | | |  
 Db 3565 ATCCGGAAGCGGCGACGGCCCCCAAGTTGGGCTGCGGAGTGGGAGG-CGCGCCGAGCCC 3623  
 Qy 1269 CCTGC--ACTTTGAGGAGGAAGAGATC--ACCTTCGCCC--CCACCTATCGATTTG--- 1318  
           | | | | | | | | | | | | | | | | | | | | | | | |  
 Db 3624 CAAGCAGACAATGCGGGAGAAG-GCTCTGCACGTAGCCCCAGCCACCCGCGCACC GGCT 3682  
 Qy 1319 AAAGACTGAC-----CCGGGAC-----AAGTATGC----- 1343  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 3683 ACAAGCCGCCCCGGGGGTGGCCGGGGCACGCAAGAGGGCAGTAACGTCTGCGAGTCTCTCCC 3742  
 Qy 1344 -----ATACACGAAGCA--GAAAGC-AACAGGGAT-----GAAGTACAACTTGCCGTC 1388  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 3743 GTGAGTACACGCGGAGCAAGGGCTGCGAGCTGGGATTGCACGGCAGAGCTGC---CCATC 3799  
 Qy 1389 CTGGT----GCGACCGA-----GTCCTCTGGAA-----GTCTTACCCGCTGGTGC 1429  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 3800 CCGCTCCACGAGACCAATACTGCAAAGGACCTCAGAAATCATCGGATTGCTTTGAGAAAC 3859  
 Qy 1430 ---ATGTGGTCTGTCACT-CCTATGGCAG-----TACCAGTGACATCATG 1470  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 3860 AAAATGTGGTCCGT--GTACCAACGGCGGCCGAGGAGAATATATTAGCTGAAAAACACA 3917  
 Qy 1471 ACGAG-----TGACCACAGCCCTGTCTTTGC-----CACGTTTGAAGCGGGAGTCACA 1518  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 3918 ACAGGGGAAATTGGCCGCAGCCAAGAAAAAGTTAAAGCATATTGGCAGAGGAAGAGCCC 3977  
 Qy 1519 TCTCAATTCGTC-----TCCAAG--AATGGTCCTGGCACT-- 1551  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 3978 TGGCATTCCAGCAGGAGCTAACAGGAAAAAGAAAATCAATGGCAGTAGCCCTGACACAGC 4037  
 Qy 1552 -----GTAGATA-----GCCAAGGG---CAG-ATCGAGTTTCT----- 1580  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 4038 CACTTCTGGTGGTTACCACTCACCTGGGGATTTCAGCAACAGGTATCTACGGGGAGGGCCG 4097  
 Qy 1581 TGCATGCTACGCCCACT-GAAGACC--AAGTCCCAG-ACTAAGTTCTA-----CTT 1628  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 4098 TGCATCCTCTACTACCCTGGAGGATCTGGAGAGCCAGTACCAAGAACTAGCAGTGGCCCT 4157  
 Qy 1629 GG-----AGTTCCAC-----TCAAGCTGCTTAGAGAGTTTTGTCAAGAGTCAGGAAGGAG 1678  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 4158 GGATTCAAGCTCCGCAATAATCAGTCAACTCACTGA-AAACATCAATTCAGTGGTTCGCA 4216  
 Qy 1679 AGAATGAAGAGG-GAAG-TGAAGGAGA-GCTGGTGGTACGG---TTTGGAGAGACTC-T 1730  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 4217 CATCTAAGGAGGAGAAGAAGCATGAGATACATCTGGTACAGAAGCTTGGGAGGAGCTTGT 4276  
 Qy 1731 TCCAAGCTAAAGCC-----CATTATCTCTGACCCC-GAGTACTTA-CTGGACCA----- 1778  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 4277 TCAAACCTCAAAAACCAGACGGCTGAACCCCTGGCCCCAGAGCCCCCAGCAGGGCCATCTA 4336  
 Qy 1779 ----- 1778  
 Db 4337 AGGTAGAGCAGCTACAAGATGAGACCAACCACCTAAGGAAGGAGCTAGAGAGTGTGGGAA 4396  
 Qy 1779 -GCATATCCTG-----ATCAGC-ATTAAATCCTCTG-ACA-GTGAC--- 1815  
           | | | | | | | | | | | | | | | | | | | | | |  
 Db 4397 GACAGCTCCAGGCTGAGGTGGAACAATCAGATGTTGAGTCTCCTGAACAGGAGACAGG 4456  
 Qy 1816 ----GAGTC-----CTATG-----GTGA-- 1829  
           | | | | | | | | | | | | | | | | | | | | | |



Db 4457 AGGAGAGGCTACGTGAACAGGAGGAGAGGCTACGTGAACAGGAGGAGAGGCAACGTGAAC 4516

Qy 1830 -----AGGCTGCATTGCC-----CTTC-----GCTTGGAG 1854  
 ||||| ||| | ||| |||

Db 4517 AGGAGGATAGGCTACATGAACAGGAGGAGAGGCTACGTGAACAGGAGGAGAGGCTGTGTG 4576

Qy 1855 ACCA---CAGAGGCT-----CA-----GCATC-----CTAT 1877  
 | || | ||||| || || | |||

Db 4577 AACAGGAGGAGAGGCTGTGTGAACAGGAGGAGAGGCTACGTGAACATGAGGAGAGGCTGT 4636

Qy 1878 -----CTAC---AC-----GCCTCT---CAC-----C 1893  
 |||| || | ||| ||

Db 4637 GTGAACAGGAGGAGAGGCTACGTGAACAGGAGGAGAGGCTGTGTGAACAGGAGGAGAGGC 4696

Qy 1894 CAC---CATGGGGAGA-----TGACT----- 1911  
 || ||||| |||

Db 4697 TACGTGAACATGAGGAGAGGCTGTGTGAACAGGAGGAGAGGCTATGTGAACAGGAGGAGA 4756

Qy 1912 GGCCACTT---CAGG-GGAGAGATT-----AAGCTG-----CAGAC-- 1943  
 ||| || | ||||| ||||| | ||||| |||

Db 4757 GGCTACATGAACAGGAGGAGAGGCTACGTGAACAGGAGGAGAGGCTGTGTGAACAGGAGG 4816

Qy 1944 -----CTCCAGGGCAAGATGAG-----GGAGAAGCTCTATGA----- 1976  
 || | | || || || || ||||| ||| |||

Db 4817 AGAGGCTACGTGAACATGAGGAGAGGCTGTGTGAACAGGAGGAGAGGCTACGTGAACATG 4876

Qy 1977 -----CTTTGTGA-----AGAC---AGAGCGGGATGA-ATCCAGTG----- 2008  
 || ||||| || | || | ||| || | |||

Db 4877 AGGAGAGGCTGTGTGAACAGGAGGAGAGGCTACGTGAACAGGAGGAGAGGCTGTGTGAAC 4936

Qy 2009 -GAATGAAATGCTTGAAGAAC-----CT-----CAC-----CAGCCATGAC 2043  
 | | || | ||| |||| || || | |||| | |

Db 4937 AGGAGGAGAGGCTACGTGAACAGGAGGAGAGGCTGTGTGAACAGGAGAAGCTGCCAGGGC 4996

Qy 2044 C-----CTAT-----GAGGCAATGGGAGC 2062  
 || | | |||| |||||

Db 4997 AGGAGAGGCTGCTGGAAGAGGTGGAGAAGCTGTTAGAACAGGAGAGGCGGCAGGAGGAGC 5056

Qy 2063 -----CTTCTGGC-AGGGTCC--CTGC-----ATGTGGTGTCTC----- 2093  
 || |||| |||| |||| | |||| | |

Db 5057 AGGAGAGGCTGCTGGAGAGGGAGAGGCTGCTGGAAGAGGTGGAGAAGCTGTTAGAACAGG 5116

Qy 2094 -----CAGC-----CTCAATGAGATGA 2110  
 |||| || | |||| ||

Db 5117 AGAGGCAGCAGGAGGAGCAGGAGAGGCTGCTGGAGAGGGAGAGGCTGCTGGAAGAGGTGG 5176

Qy 2111 TCAATC-----C-----AAACTAC----- 2124  
 || | | || | |||

Db 5177 AGAAGCTGTTAGAACAGGAGAGGCGGCAGGAGGAGCAGGAGAGGCTGCTGGAGAGGGAGA 5236

Qy 2125 -ATTGCCAACCGAGGT-----CCCT-----GCCCCAG--GGTGCAAGAG-----GC 2162  
 ||| ||||| ||| | ||| |||| ||| ||

Db 5237 GGCTGCTGGACGAGGTGGAGGAGCTCCTGGACGAGACTCTGCAGGAGCTGGAGAGGCTGC 5296

Qy 2163 AAGACCTG-----GGGATCTGGGAAAGGT-----GGAAGCTCTG- 2196  
 || ||| |||| |||| | | | ||||| |||

Db 5297 GGGAGCTGGAGAGGCTGCGGGAGCTGGAGAGGATGCTGGAGCTGGGGTGGGAAGCCCTGT 5356

Qy 2197 -----CTC-CAG-----GAGGACCTG----- 2211  
 | | ||| ||||| |||

Db 5357 ACGAGCAGCGGGCCGAGCCACGCAGCGGCTTCGAGGAGCTGAACAACGAGAACAAGAGCA 5416

Qy 2212 --CTGCTGACGAAGC----- 2224  
 |||| | | |||

# SCORE Search Results Details for Application 10605452 and Search Result us-10-605-452c-1.rag.

[Score Home](#)    [Retrieve Application](#)    [SCORE System](#)    [SCORE](#)    [Comments /](#)  
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GenCore version 5.1.9  
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OM protein - protein search, using sw model

Run on: July 28, 2006, 17:25:50 ; Search time 346.17 Seconds  
(without alignments)  
5448.236 Million cell updates/sec

Title: US-10-605-452C-1  
Perfect score: 25179  
Sequence: 1 GTTCCCACTAGTTGTTGAAC.....AATAAAATTGTGCCTTTCTA 4125

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 2589679 seqs, 457216429 residues

Total number of hits satisfying chosen parameters: 2589679

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : A\_Geneseq\_8:\*  
1: geneseqp1980s:\*  
2: geneseqp1990s:\*  
3: geneseqp2000s:\*  
4: geneseqp2001s:\*  
5: geneseqp2002s:\*  
6: geneseqp2003as:\*  
7: geneseqp2003bs:\*  
8: geneseqp2004s:\*  
9: geneseqp2005s:\*  
10: geneseqp2006s:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result	Score	Match	Query	Length	DB	ID	Description
No.							
1	11079.5	44.0	8973	8	ADP31119		Adp31119 Human sec

2	10747	42.7	6729	8	ADP31600	Adp31600	Human	sec
3	10730	42.6	5820	8	ADP31118	Adp31118	Human	sec
4	10532.5	41.8	10944	8	ADP31311	Adp31311	Human	sec
5	10532.5	41.8	11328	8	ADP31310	Adp31310	Human	sec
6	10532	41.8	4848	8	ADP31259	Adp31259	Human	sec
7	10497	41.7	7285	6	ABJ38280	Abj38280	pAMG21-RA	
8	10496	41.7	5514	8	ADP31186	Adp31186	Human	sec
9	10496	41.7	5514	8	ADP31591	Adp31591	Human	sec
10	10439	41.5	9195	8	ADP31494	Adp31494	Human	sec
11	10420	41.4	5397	8	ADP31068	Adp31068	Human	sec
12	10409.5	41.3	8976	8	ADP31425	Adp31425	Human	sec
13	10388	41.3	4683	8	ADP31260	Adp31260	Human	sec
14	10228.5	40.6	4360	8	ADP30525	Adp30525	Human	sec
15	10204.5	40.5	6465	8	ADP30705	Adp30705	Human	sec
16	10089	40.1	7339	6	AAO16358	Aao16358	Human	tra
17	9879.5	39.2	4752	8	ADP30585	Adp30585	Human	sec
18	9879.5	39.2	4752	8	ADP30651	Adp30651	Human	sec
19	9733	38.7	5304	8	ADP30706	Adp30706	Human	sec
20	9690	38.5	3907	5	ABG70822	Abg70822	Mouse	myo
21	9690	38.5	3907	6	ABG74190	Abg74190	Mouse	myo
22	9229	36.7	3585	8	ADP31117	Adp31117	Human	sec
23	9001.5	35.8	3638	8	ADP30981	Adp30981	Human	sec
24	8910	35.4	4440	6	ABU88256	Abu88256	Novel	hum
25	8910	35.4	4440	6	ABU90135	Abu90135	Novel	hum
26	8910	35.4	4440	6	ABU96437	Abu96437	Novel	hum
27	8910	35.4	4440	6	ABU99046	Abu99046	Novel	hum
28	8910	35.4	4440	6	ABU98261	Abu98261	Novel	hum
29	8910	35.4	4440	6	ABU91967	Abu91967	Novel	hum
30	8910	35.4	4440	6	ABU85271	Abu85271	Novel	hum
31	8910	35.4	4440	6	ABO00410	Abo00410	Novel	hum
32	8910	35.4	4440	6	ABU88961	Abu88961	Novel	hum
33	8910	35.4	4440	6	ABO06457	Abo06457	Novel	hum
34	8910	35.4	4440	6	ABU95517	Abu95517	Novel	hum
35	8910	35.4	4440	6	ABU95207	Abu95207	Novel	hum
36	8910	35.4	4440	6	ABU90755	Abu90755	Novel	hum
37	8910	35.4	4440	6	ABU93917	Abu93917	Novel	hum
38	8910	35.4	4440	6	ABU86191	Abu86191	Novel	hum
39	8910	35.4	4440	6	ABU82046	Abu82046	Novel	hum
40	8910	35.4	4440	6	ABU07907	Abu07907	Novel	hum
41	8910	35.4	4440	6	ABU94227	Abu94227	Novel	hum
42	8910	35.4	4440	6	ABO00100	Abo00100	Novel	hum
43	8910	35.4	4440	6	ABU87111	Abu87111	Novel	hum
44	8910	35.4	4440	6	ABU91352	Abu91352	Novel	hum
45	8910	35.4	4440	6	ABU90445	Abu90445	Novel	hum

#### ALIGNMENTS

##### RESULT 1

ADP31119

ID ADP31119 standard; protein; 8973 AA.

XX

AC ADP31119;

XX

DT 01-DEC-2005 (revised)

DT 12-AUG-2004 (first entry)

XX

DE Human secreted protein SEQ ID #3117.

XX

KW Cytostatic; Antiinflammatory; Immunosuppressive; Antibacterial; Virucide;  
 KW cancer; inflammatory; immune; human secreted protein.

XX

OS Homo sapiens.

XX  
PN WO2004035732-A2.  
XX  
PD 29-APR-2004.  
XX  
PF 28-AUG-2003; 2003WO-US026780.  
XX  
PR 29-AUG-2002; 2002US-0406576P.  
PR 29-AUG-2002; 2002US-0406579P.  
PR 29-AUG-2002; 2002US-0406585P.  
PR 29-AUG-2002; 2002US-0406588P.  
PR 29-AUG-2002; 2002US-0406608P.  
PR 29-AUG-2002; 2002US-0406611P.  
PR 29-AUG-2002; 2002US-0406612P.  
PR 29-AUG-2002; 2002US-0406616P.  
PR 29-AUG-2002; 2002US-0406640P.  
PR 29-AUG-2002; 2002US-0406642P.  
PR 29-AUG-2002; 2002US-0406646P.  
PR 29-AUG-2002; 2002US-0406653P.  
PR 29-AUG-2002; 2002US-0406655P.  
PR 29-AUG-2002; 2002US-0406666P.  
PR 17-SEP-2002; 2002US-0410946P.  
PR 17-SEP-2002; 2002US-0410947P.  
PR 17-SEP-2002; 2002US-0410948P.  
PR 17-SEP-2002; 2002US-0410949P.  
PR 17-SEP-2002; 2002US-0410953P.  
PR 17-SEP-2002; 2002US-0410957P.  
PR 17-SEP-2002; 2002US-0410958P.  
PR 17-SEP-2002; 2002US-0410959P.  
PR 17-SEP-2002; 2002US-0410960P.  
PR 17-SEP-2002; 2002US-0410961P.  
PR 17-SEP-2002; 2002US-0410962P.  
PR 17-SEP-2002; 2002US-0411019P.  
PR 17-SEP-2002; 2002US-0411022P.  
PR 17-SEP-2002; 2002US-0411023P.  
PR 17-SEP-2002; 2002US-0411024P.  
PR 17-SEP-2002; 2002US-0411032P.  
PR 17-SEP-2002; 2002US-0411035P.  
PR 17-SEP-2002; 2002US-0411037P.  
PR 17-SEP-2002; 2002US-0411041P.  
PR 17-SEP-2002; 2002US-0411045P.  
PR 17-SEP-2002; 2002US-0411046P.  
PR 17-SEP-2002; 2002US-0411048P.  
PR 17-SEP-2002; 2002US-0411052P.  
PR 17-SEP-2002; 2002US-0411055P.  
PR 17-SEP-2002; 2002US-0411073P.  
PR 17-SEP-2002; 2002US-0411082P.  
PR 17-SEP-2002; 2002US-0411101P.  
PR 17-SEP-2002; 2002US-0411111P.  
PR 18-APR-2003; 2003US-0463700P.  
PR 18-APR-2003; 2003US-0463708P.  
PR 18-APR-2003; 2003US-0463716P.  
PR 18-APR-2003; 2003US-0463732P.  
PR 02-MAY-2003; 2003US-0467199P.  
PR 02-MAY-2003; 2003US-0467201P.  
PR 02-MAY-2003; 2003US-0467203P.  
PR 02-MAY-2003; 2003US-0467230P.  
PR 19-MAY-2003; 2003US-0471306P.  
PR 19-MAY-2003; 2003US-0471336P.  
PR 22-MAY-2003; 2003US-0472420P.  
PR 22-MAY-2003; 2003US-0472430P.  
PR 09-JUN-2003; 2003US-0476609P.  
PR 09-JUN-2003; 2003US-0476641P.  
PR 08-JUL-2003; 2003US-0485218P.

PR 08-JUL-2003; 2003US-0485223P.  
PR 08-JUL-2003; 2003US-0485224P.  
PR 08-JUL-2003; 2003US-0485325P.  
PR 14-JUL-2003; 2003US-0486446P.  
PR 14-JUL-2003; 2003US-0486480P.  
PR 15-JUL-2003; 2003US-0486891P.  
PR 15-JUL-2003; 2003US-0486960P.  
PR 08-AUG-2003; 2003US-0493341P.  
PR 08-AUG-2003; 2003US-0493370P.  
PR 08-AUG-2003; 2003US-0493573P.  
PR 08-AUG-2003; 2003US-0493577P.

XX

PA (FIVE-) FIVE PRIME THERAPEUTICS INC.

XX

PI Williams LT, Chu K, Lee E, Hestir K, Beaurang PA, Behrens D;  
PI Halenbeck RF, Huang MM, Kothakota S, Haishan L, Linnemann T;  
PI Pierce K, Wang Y, Wong JGP, Wu G, Zhang H;

XX

DR WPI; 2004-348438/32.

XX

PT New nucleic acid molecule for diagnosing, preventing or treating diseases  
PT such as proliferative (e.g. cancer), inflammatory, immune, metabolic,  
PT genetic, bacterial and viral diseases.

XX

PS Claim 1; SEQ ID NO 3117; 428pp; English.

XX

CC The present invention relates to an isolated nucleic acid molecule  
CC encoding a polypeptide which is believed to be cytostatic,  
CC antiinflammatory, immunosuppressive, antibacterial and virucidal. The  
CC composition and methods are useful for diagnosing, preventing and  
CC treating diseases such as proliferative (e.g. cancer), inflammatory,  
CC immune, metabolic, genetic, bacterial and viral diseases. The present  
CC sequence represents a human secreted protein. The present sequence is  
CC available on WIPOWEB and is not in the specification. Note: This sequence  
CC is represented as a 3-letter coded protein in the corresponding sequence  
CC listing but appears to be a polynucleotide sequence.

CC

CC Revised record issued on 01-DEC-2005 : Sequence description line  
CC corrected

XX

SQ Sequence 8973 AA;

Query Match 44.0%; Score 11079.5; DB 8; Length 8973;  
Best Local Similarity 37.0%; Pred. No. 0;  
Matches 2728; Conservative 0; Mismatches 1319; Indels 3335; Gaps 422;

Qy 4 CCCACTA----GTTGTTGA---ACTTTACCTTGAACCTCTGCTCCCAGGGAAGTCATCAG 56  
||||||| || || | | || | || |||| ||| | | ||| |  
Db 1652 CCCACTACCACGTCACAGACAGCCCTCACTGGGGACAGTTGCT-CCAAGCCACTCAGCCA 1710  
  
Qy 57 GACTCTGCCATCCCT--GGAGTCTCTGC----AGAGGTTGTT-----TGACCA----- 98  
| | | ||| || || | || |||| | || |||| | || |||  
Db 1711 GCCACAGCCTTCTCTCAGCAGGACCTGCTGGTGGGGCTGTTCCCTATGGCCACAATGGC 1770  
  
Qy 99 ----ACAGCTC-----TCCCCAGGCCCTCGCCCCACGACCT----CAGGTGCCCGGAGAG 144  
|||||| ||| ||||| | || | | |||| | |||  
Db 1771 AGCCTCAGCTCCTGCAACACCCTGGCCTTCTCAATGGATGTGGGACCAGTGCACACAGAT 1830  
  
Qy 145 GCCAGTCCCATC-----ACCAT-----GGTTGCCAAACT----CAGCCAA 180  
|||| ||| | |||| | || ||| ||| | | |  
Db 1831 GCCA--CCCTACAAGTGACCATTGCCCTAGAGGGCCAGTAGCCCCACTGAAGCTGGCCC 1888  
  
Qy 181 TTGACAAG---TCTGCTGTCTTCCATTGA-----AGATAAGGTCA----AGTCCTTGCT 227  
|||| ||| | ||||| || || | || ||| | || |||

Db 1889 AGCACAAGAAGATCTAC-ATCTTCCAGGGAGAGGCAGCTGAGATCAGAAGGGACC-AGCT 1946  
 Qy 228 GCACGAGG--GCTCAGAA-----TCTACCAACAGG---CGTTCCCTT-----ATCCC 269  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 1947 G---GAGGTAGCCCAGGAGGCAGTGCCGCCAGCAGACATCGTTTTCTCAGTGAAGAGCCC 2003  
 Qy 270 TCCG---GTCACCTTTGAGGTGAAGTCAGAGTCCCTGGGCATTCCCTCAGAAAAT--GCAT 324  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2004 ACCGAGTGCCGGCTACCTGGTGATG---GTGCTGCGTGGCAT--CTTGGCAGATGAGCCA 2058  
 Qy 325 CTCAAAGTGGACGTTGAGTCTGGGAAACTGATCGTTAAGAAGT---CCAAGGATGGTT-- 379  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2059 CCCAGCCTGGACCCCGTG-CAGAGCTTCT-CCCAAGAGGCAGTGGACACAGGCAGGATCC 2116  
 Qy 380 -----CTGAGGACAAGTTCTACAGCCACAAAAAATCCTGC-AGCTCATTAAGTCC-CAG 432  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2117 TCTACCTGCACTCCCGCCCTGAGGCCCGGAGCCATGCCTTCTCGCTGGATGTGGCCTCGG 2176  
 Qy 433 --AAGTTTCTAAACAAGTTGGTGATTTTGGTGAGACGGAGAAGG-AGAAAAT----- 482  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2177 CCTGGGTGCTACCCTTGAGGACG--TCACGTGGAGCTGGAGGTGGAAGAGCATCTGATCC 2234  
 Qy 483 ----CCTG-----AGGAAG---GAATATGT---TTTTG--CTGA-----CTCTAA 515  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2235 AGTACCTGCACGATGGGAGCAAGACACTGACGGTTTTGTCTGATGGCTAATGCCTCTGA 2294  
 Qy 516 GA-----AAAGAG-----AAGGCTT---CTGTCAAC-TCCTG----- 543  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2295 GATGGACCGCCAGAGCCATCCTGTGGCCTTCACTGTCAACATCCTGCCTGTCAATGGCCA 2354  
 Qy 544 -----CAGCAGA-----TGAAGAACAAG----- 561  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2355 ACCCCCGACCTCATACAAACCTCAGGCCCTGCAGAGGCTCTGAGGAGCATGGATGGTTACTC 2414  
 Qy 562 -----CATT---CGGAGCAGC----- 574  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2415 TGGGCCCCAAGGACCTGGTGACACCATTAGCAGCCCAGCAATGGGTGGGTAGTGCGGTG 2474  
 Qy 575 --CAGAGCCTGACA-TGA---TC--ACCATCTTCATTGGCA-----CTTGGAACATG 618  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2475 GCGGGTGCCGGGCACTGAGAGTCCGTCCAGCCAC-TCAGCAGCCAGAGCCTCAGAGCCAG 2533  
 Qy 619 --GGTAATGCACCCC-----CTCCCAAGAAGATCACGTCCT-----GG- 654  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2534 CAGGCACCGACCCCAGCTCCTGCTCTACCATGTGGTGCGGGGCCTCCAGCTAGGCCGGC 2593  
 Qy 655 --TTTCTCTCCAAG-----GGGCAGGGAAAGACACG--GGACGACTCTGCTGACTACA 703  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2594 TCTTCCACGCCCAGCATGACAGCACAGGGGAGGACCTGGTGAACCTTCACT-CAGGCAGAG 2652  
 Qy 704 TCCCC-----CATGACATCTATGTG--ATTGGC-----ACCCAGGAGGATCCCC-- 745  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2653 ACCCCGGAGTTCAT--CATCTCGGAGCCGCTGGCCAATATGTACTCATGTGGGAACCAGA 2710  
 Qy 746 -----TTGG-AGAGAAGG---AGTGGCTGGA-----GCTACTCAGGC 778  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2711 ACACACTGATGGAGGAGTTGGCAGAGCAGGCACAGCAGCAGACGAGATGCTGCACATGC 2770  
 Qy 779 ACTCCCTGC--AAGAAGTCAC-CAGCA-----TGACATTTAAA-----ACAGTTGCCA 823  
 | | | | | | | | | | | | | | | | | | | | | |  
 Db 2771 ACCACGCGCTGAAGGAGGCGCTCAGCATCATCGGTGACATCAACAGGACCACTGTTACCA 2830  
 Qy 824 T--CCACACCC-----TCTG-----GAACAT----- 842  
 | | | | | | | | | | | | | | | | | | | | | |

Db	2831	TGCCCCCGCCCGTGGACGACACCTGGTTGCAGGTGCAGAGCATCCCTGACGCACACAGGC	2890
Qy	843	-----TCGCATAG-----TGGTGCT----TG-CCAAGCCAG	868
Db	2891	CAGAGGCTTCCCCTGATCCCTTTGGGCCCTACCCCCCTGGTGCTCTTGTGCCCCAGCCGG	2950
Qy	869	AG---CATGAGAATCGGAT-----CAG--CCATATCTGCAC-TGACAAC----	906
Db	2951	GGTCCCCAGTGTGCCGAGTGGCTGCACGCCCCAGATCCATG-CGGCACGTGCCGGCCGGG	3009
Qy	907	----GTG-----AAGACAGGCATCGCCAACACCCTGGGAAACAAGGG-AGCAG--	949
Db	3010	CCCGGTGGGTCTCCCCAAACACAGAC-TCACCCCCACTCTCTGGGGCTGGGGCCGCTACC	3068
Qy	950	-----TGGGA--GTGTCCTTCATGTTCAATGGAACCT-----	979
Db	3069	TCTGGCTTCTTCTGGGACTTTGTTCCTCTGGGCACTGGCTCCAGCGGAGTTGAAAAATG	3128
Qy	980	-----CCTTGGGGTTCGTCAACAGCCACTTGACTT----	1009
Db	3129	CCACCTGAAGACAAGAGGACTAAAGGCCTCTTGGCACATACACCACCCCTTGAATTTCCA	3188
Qy	1010	-----CTGGA-AGCGAAAAAAGCTCAGGAGAAATCAAACTATATGAA	1052
Db	3189	GTTCAACCACCACCAGCCCGGACAGTGACCACATTCTCATCAAAGTGCAAATTTCTATTCT	3248
Qy	1053	CATC-----CTGCGGTTCTGGCCC-----TGGGAGACAA	1082
Db	3249	TATCCCCACTTCTGCCAACCTAAACCTACTTTAAGTCGCTTATACGGCATAGGAGCCAA	3308
Qy	1083	GA-AGCTAAGCC-----CATT-----TAACATCA	1105
Db	3309	AATAGCAGGGACACATCTTATAGAATCCTTTGAAATGCATTTCTATTACTTTCTCACCTCC	3368
Qy	1106	CCCACC---GCTTCACCCAC-CTC-----TTCT-----GG----	1131
Db	3369	TCCACCTCCTTCTACACTCTCTCTCAACGAAACCGCTGTTCTTCTTCAACCAAGGATAA	3428
Qy	1132	-----CTTG-----GGGATCTCAACTACCGCTGGAGCTGC---CCACTTGGG	1171
Db	3429	AATCAAGCACTTGTTTCGCGGCGCGGACTCCAC-ACCGCG---GCCGCCGCCCCAGGGG	3483
Qy	1172	AGGC-AGAGGCCATCATCCAGAAGATCAAGC-----AACAG---CAGTATTC-AGACC	1219
Db	3484	AGGAGTGAGTCCGCC--CCAGCGGCGCCAACCCGGGGACCCGGGGCAAGGGTTCGGGGCC	3541
Qy	1220	TTCTG--GCC---CACGAC-----CAACTGCTCC-----TG	1245
Db	3542	ATCCGCCGCCGGGCGCGCCCCCATCCGAAAGCGGCGACGGCCCCCAAGTTGGGCTGCG	3601
Qy	1246	GAGAGGAAGGACCAGAAGGTCTTCTCTGC--ACTTTGAGGAGGAAGAGATC--ACCTTCGC	1301
Db	3602	GAGTGGGAGG-CGCGCCGAGCCCCAAGCAGACAATGCGGGAGAAG-GCTCTGCACGTAGC	3659
Qy	1302	CC---CCACCTATCGATTTG---AAAGACTGAC-----CCGGGAC-----	1335
Db	3660	CCCAGCCACCCCGCGCACCGGCTACAAGCCGCCCGGGGGTGGCCGGGGCACGCAAGAGGG	3719
Qy	1336	-----AAGTATGC-----ATACACGAAGCA-----GAAA	1359
Db	3720	CAGTAACGTCTGCGAGTCTCCCGTGAGTACACGCGGAGCAAGGGCTGCGAGCTGGGATT	3779
Qy	1360	GCA--ACAGGGATG-----AAGTACAAC-----	1380

Db 3780 GCACGGCAGAGCTGCCCATCCCGCTCCACGAGACCAATACTGCAAAGGACCTCAGAAAATC 3839

Qy 1381 -----TTGC-----C-----GTCCTGGT-----GCGACCGAG----- 1402  
 |||| | |||| || |||||

Db 3840 ATCGGATTGCTTTGAGAAACAAAATGTGGTCCGTGTACCAACGGCGGCCGAGGAGAATAT 3899

Qy 1403 -----TCCTCTGGAAGTCTTACCCGCTG-----GT-----GCATG 1432  
 | | || || |||| | || ||||

Db 3900 ATTAGCTGAAAAAACACAACAGGGGAAATTGGCCGCAGCCAAGAAAAAGTTAAAAGCATA 3959

Qy 1433 TGGTCTGT--CAGTCCTATGGCAGTACCAG-----TGACATCATGACG-----AGTG 1477  
 | | | | || | |||| | |||| | || | | | |

Db 3960 TTGGCAGAGGAAGAGCCCTGGCA-TTCCAGCAGGAGCTAACAGGAAAAAGAAAATCAATG 4018

Qy 1478 ACCACAGCCCTGTCTTTGCCACGTTTGAAG-----C--GGGAGTCA-CATC-- 1520  
 | ||||| | |||| | || | | ||||| |||

Db 4019 GCAGTAGCCCTGACACAGCCACTTCTGGTGGTTACCACTCACCTGGGGATTTCAGCAACAG 4078

Qy 1521 ---TCAA-----TTCGTCT-----CC 1533  
 || | || || || ||

Db 4079 GTATCTACGGGGAGGGCCGTGCATCCTCTACTACCCTGGAGGATCTGGAGAGCCAGTACC 4138

Qy 1534 AAGAA-----TGGTCCTGG-----CACTGTAGATA 1558  
 |||| | || |||| | |||| | | |

Db 4139 AAGAACTAGCAGTGGCCCTGGATTCAAGCTCCGCAATAATCAGTCAACTCACTGAAAACA 4198

Qy 1559 GC---CAAGG---GCAGATC-----GAGTTTCTT----- 1581  
 | || | || || || || || || ||

Db 4199 TCAATTCACTGGTTCGCACATCTAAGGAGGAGAAGAAGCATGAGATACATCTGGTACAGA 4258

Qy 1582 -----GCATGCTACGCCACA-----CTGAAGACCAAGTCCCGA-- 1615  
 || || | || || || || || || || || || ||

Db 4259 AGCTTGGGAGGAGCTTGTTCAACTCAAAAACCAGACGGCTGAACCCCTGGCCCCAGAGC 4318

Qy 1616 -----CTAAGTT-----CTACTTG--GAG---TTCCACTCAAG----- 1643  
 |||| | || || | || || || ||

Db 4319 CCCCAGCAGGGCCATCTAAGGTAGAGCAGCTACAAGATGAGACCAACCACCTAAGGAAGG 4378

Qy 1644 -----CTGCT-----TAGAGA-----GTTTTGT- 1661  
 | || | || || | || || || ||

Db 4379 AGCTAGAGAGTGTGGGAAGACAGCTCCAGGCTGAGGTGGAAAACAATCAGATGTTGAGTC 4438

Qy 1662 -----CAAGAGTCAGGAAGGAGAGAAT-----GAAGAGG-----GAAGTG 1696  
 || || | || || || || || | || || || || || ||

Db 4439 TCCTGAACAGGAGACAGG-AGGAGAGGCTACGTGAACAGGAGGAGAGGCTACGTGAACAG 4497

Qy 1697 AAGGAGAG-----CTGGTGGTACGGTT-----TGGAGAGACTC--TTCC 1733  
 ||||| | || || || || || || || || ||

Db 4498 GAGGAGAGGCAACGTGAACAGGAGGATAGGCTACATGAACAGGAGGAGAGGCTACGTGAA 4557

Qy 1734 C-----AAGCT-----AAAGCCCATATCTC-----TGACCCCGA 1763  
 | || | || || | || || || || || ||

Db 4558 CAGGAGGAGAGGCTGTGTGAACAGGAGGAGGCTGTGTGAACAGGAGGAGAGGCTACGT 4617

Qy 1764 GTACTT-----ACTG---GACCAG-----CATATCC----- 1786  
 | || | || || || || || || || || ||

Db 4618 GAACATGAGGAGAGGCTGTGTGAACAGGAGGAGGCTACGTGAACAGGAGGAGAGGCTG 4677

Qy 1787 --TGATCAGCATTAAATCCTCTG---ACA-GTGACGAGTC----- 1820  
 ||| ||| | | || | || || || || || ||

Db 4678 TGTGAACAGGAGGAGAGGCTACGTGAACATGAGGAGAGGCTGTGTGAACAGGAGGAGAGG 4737

Qy 1821 CTATG-----GTGAAGGCTGCATTGCC-----CTTC----- 1846  
 |||| | |||| || | || |



Db 4738 CTATGTGAACAGGAGGAGAGGCTACATGAACAGGAGGAGAGGCTACGTGAACAGGAGGAG 4797  
 Qy 1847 --GCTTGGAGACCA----CAGAGGCTCAG----CAT-----CCTAT----- 1877  
 Db 4798 AGGCTGTGTGAACAGGAGGAGAGGCTACGTGAACATGAGGAGAGGCTGTGTGAACAGGAG 4857  
 Qy 1878 -----CTACACG--CCT-----CT-----CAC-----CCAC-----CAT 1899  
 Db 4858 GAGAGGCTACGTGAACATGAGGAGAGGCTGTGTGAACAGGAGGAGAGGCTACGTGAACAG 4917  
 Qy 1900 GGGGAGATGACT-----GGCCACTT---CAGG-GGAGAGATTAAG--- 1935  
 Db 4918 GAGGAGA-GGCTGTGTGAACAGGAGGAGAGGCTACGTGAACAGGAGGAGAGGCTGTGTGA 4976  
 Qy 1936 -CTGCAGAC-CTCCCAGGGCAAGA----- 1957  
 Db 4977 ACAGGAGAAGCTGCCAGGGCAGGAGAGGCTGCTGGAAGAGGTGGAGAAGCTGTTAGAACA 5036  
 Qy 1958 -----TGAGGGAGAAGCT-CT--ATGACTT 1979  
 Db 5037 GGAGAGGCGGCAGGAGGAGCAGGAGAGGCTGCTGGAGAGGGAGAGGCTGCTGGAAGAGGT 5096  
 Qy 1980 TGTGAAG-----ACAG-----AGCGGGATGA-----ATCCAGTGGAATGA 2014  
 Db 5097 GGAGAAGCTGTTAGAACAGGAGAGGCAGCAGGAGGAGCAGGAGAGGCTGCTGGAGAGGGA 5156  
 Qy 2015 AATGCT-----TGAAGAACCT----- 2030  
 Db 5157 GAGGCTGCTGGAAGAGGTGGAGAAGCTGTTAGAACAGGAGAGGCGGCAGGAGGAGCAGGA 5216  
 Qy 2031 -----CACC-AGCCATGACCCCT 2046  
 Db 5217 GAGGCTGCTGGAGAGGGAGAGGCTGCTGGACGAGGTGGAGGAGCTCCTGGACGAGACTCT 5276  
 Qy 2047 -----ATGAGGCAATGGGAGC-----CTTCTG----- 2068  
 Db 5277 GCAGGAGCTGGAGAGGCTGCGGGAGCTGGAGAGGCTGCGGGAGCTGGAGAGGATGCTGGA 5336  
 Qy 2069 GCAGGG-----TCCCTGCATGTG-----GTGTCTC---CAGCCTCAATGAGAT 2108  
 Db 5337 GCTGGGGTGGGAAGCCCTGTACGAGCAGCGGGCCGAGCCACGCAGCGGCTTCGAGGAGCT 5396  
 Qy 2109 GATCA-----ATC-----CAAACCTACA-TTG-----GTATGGGGCCTTTTG--GAC 2146  
 Db 5397 GAACAACGAGAACAAGAGCACACTGCAGTTGGAGCAGCAAGTAAAGGAGCTGAAGAAAGTC 5456  
 Qy 2147 AG--CCCCTGCATGGGAAATCAACC-CTGTCCC-----CAGATC-- 2182  
 Db 5457 GGGTGAGCTGAAAGAGACTGTAACCTCCGACCCATCCAAGAAGATGTGGGAGCCAATCGT 5516  
 Qy 2183 -----AGCAACTCACA-----GCT-----TGAGAGTTA---TGACCAGCTA 2214  
 Db 5517 GTTTAAGGAGAACTAACAATGAAAACGGACTCGTTGATGGAGGAAAAGTTGGAATGCAG 5576  
 Qy 2215 CC-----CAAAGACTCCTCCCTGGGGC-----CTGGGAGGGGG 2247  
 Db 5577 CCTCTGGTGCTGTTTGAGCAATCCCTCTATCCCGGTCGCTGCTGTGTTCTGGAAAGGCG 5636  
 Qy 2248 GAGGGTCCTC-----CAAC-----CC-----CTCCCTCCC----- 2272  
 Db 5637 CATTGTACCCTGGATGCAGCAGGAATCCTATTCTTCTTACCGATATGGTCTGTGGA 5696  
 Qy 2273 -----AACCACCTCTGTCGCCA-----AAGAAGTT----- 2297